

than quartz, which was used at Khartoum and in the Wilton of Rhodesia. It may be this fact which makes the connexion seem closest with the Wilton of Rhodesia; the crescents and slug-like borers of the two industries resemble each other, although at Khartoum crescents greatly outnumber the borers, while apparently in south Africa the proportion is the other way. Burins are rare in the two cultures, and the microlithic cores apparently resemble each other closely.

To the north the connexion with the Capsian of north Africa seems to be closer than with the Upper Sebilian of Kom Ombo in the Nile valley. The *pointes scalènes*, *triangles scalènes*, *triangles* and *trapèzes* of Khartoum are all typical of the Capsian, while in the Upper Sebilian *trapèzes* are common, and *triangles* occur, but *pointes scalènes* and *triangles scalènes* are rare or non-existent. The slug-like borers occur rarely in the Capsian but apparently not at all in the Upper Sebilian.

The survival in a degenerate form at Khartoum of the prepared platform technique also suggests a possible connexion with the Sebilian.

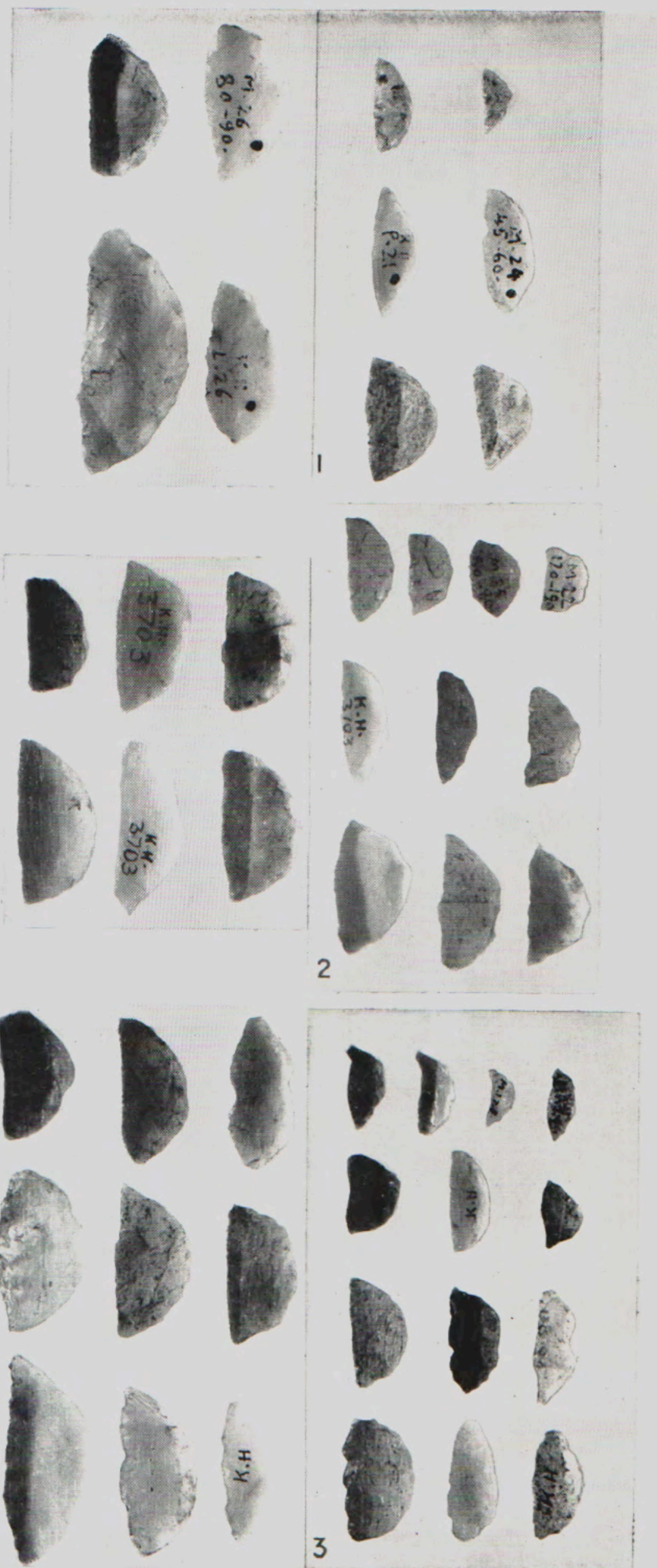
Ochre grinders occur with all the industries now under consideration. Flat bored stones occur with the Wilton, and also apparently with the Capsian (Vaufrey, 1933, p. 474). One stone with a groove round it ('une sorte de peson (bola?) en calcaire muni d'une gorge circulaire') is reported from the Capsian (Vaufrey, 1933, p. 467) and may be comparable to our '? fishing-line sinkers', which were also found with the Fayum Neolithic (?) and at Taferjit.

The occurrence of early pottery with a somewhat similar industry, the Upper Kenya Capsian, is to be noted (Leakey, 1931, p. 103), and although the prevalence of burins and the existence of micro-burins and developed scrapers differentiate that industry from the Khartoum industry, this divergence may perhaps be in part due to the nature of the material used at Khartoum.

PLATE 10

CRESCENTS (QUARTZ)

1. Quartz crescents—also illustrated by line drawings on Pl. 13,
Figs. 4, 6-8, and 10-15.
2. Quartz crescents with bulb of percussion remaining.
3. Quartz crescents with no bulb.



CRESCENTS (QUARTZ)

SCALE 1:1

PLATE 11

CRESCENTS (RHYOLITE, ETC.)

1. Rhyolite crescents with bulb remaining. (Three are also illustrated by line drawings on Pl. 13, Figs. 1, 9, 17.)
2. Rhyolite crescents with no bulb. (Four are also illustrated by line drawings on Pl. 13, Figs. 2, 3, 5, 16.)
3. Small crescents with no bulb (rhyolite, mudstone, and agate).



CRESCENTS (RHYOLITE, ETC.)
SCALE 1:1

PLATE 12

BACKED BLADES, *POINTES SCALÈNES*,
TRIANGLES SCALÈNES, AND CHISEL-TYPE
ARROW-HEADS

1. Backed blades (also illustrated by line drawings on Pl. 13, Figs. 18-23).
2. Thick backed blades.
3. Thin backed blades.
4. Crescents backed at each end only.
5. *Pointes scalènes*. (Two are also illustrated by line drawings on Pl. 13, Figs. 24, 25.)
6. *Triangles scalènes*. (Three are also illustrated by line drawings on Pl. 13, Figs. 26-8.)
7. *Triangles*. (Two are also illustrated by line drawings on Pl. 15, Figs. 7-8.)
8. *Trapezes*. (Two are also illustrated by line drawings on Pl. 15, Figs. 5-6.)
9. Round-backed arrow-heads. (Four are also illustrated by line drawings on Pl. 15, Figs. 1-4.)



BACKED BLADES, *POINTES SCALÈNES*, *TRIANGLES SCALÈNES*, AND CHISEL-TYPE
ARROW-HEADS

SCALE 1:1

PLATE 13

CRESCENTS, BACKED BLADES, *POINTES SCALÈNES*, AND *TRIANGLES SCALÈNES*

1. Crescent (bulb remaining): rhyolite. (See also Pl. 11, Fig. 1.)
2. Crescent (no bulb): rhyolite. (See also Pl. 11, Fig. 2.)
3. Crescent (no bulb): rhyolite. (See also Pl. 11, Fig. 2.)
4. Crescent (part of bulb remaining): quartz. M 28, 160-80 cm. (See also Pl. 10, Fig. 1.)
5. Crescent (trace of bulb): rhyolite. (See also Pl. 11, Fig. 2.)
6. Crescent (no bulb): quartz. M 26, 80-90 cm. (See also Pl. 10, Fig. 1.)
7. Crescent (trace of bulb): quartz. M 30, 180-200 cm. (See also Pl. 10, Fig. 1.)
8. Crescent (bulb remaining): quartz. (See also Pl. 10, Fig. 1.)
9. Crescent (no bulb): rhyolite. (See also Pl. 11, Fig. 1.)
10. Crescent (bulb remaining): quartz. M 29, 180-200 cm. (See also Pl. 10, Fig. 1.)
11. Crescent (no bulb): quartz. M 24, 45-60 cm. (See also Pl. 10, Fig. 1.)
12. Crescent (bulb remaining): quartz. (See also Pl. 10, Fig. 1.)
13. Crescent (no bulb): quartz. M 27, 200-57 cm. (See also Pl. 10, Fig. 1.)
14. Crescent (no bulb): quartz. M 21 (2/6). (See also Pl. 10, Fig. 1.)
15. Crescent (no bulb): quartz. (See also Pl. 10, Fig. 1.)
16. Atypical *trapèze*-like crescent (no bulb): rhyolite. (See also Pl. 11, Fig. 2.)
17. Crescent-scraper (bulb remaining): rhyolite. (See also Pl. 11, Fig. 1.)
- 18-19. Backed blades, ? purposely unfinished at one end: quartz. (See also Pl. 12, Fig. 1.)
- 20-3. Backed blades: quartz. (See also Pl. 12, Fig. 1.)
24. *Pointe scalène*: quartz. M 28, 160-80 cm. (See also Pl. 12, Fig. 5.)
25. *Pointe scalène*: quartz. M 23, 120-40 cm. (See also Pl. 12, Fig. 5.)
26. *Triangle scalène*: quartz. M 27, 100-20 cm. (See also Pl. 12, Fig. 6.)
27. *Triangle scalène*: quartz. M 21 (2/6). (See also Pl. 12, Fig. 6.)
28. *Triangle scalène*: quartz. (See also Pl. 12, Fig. 6.)

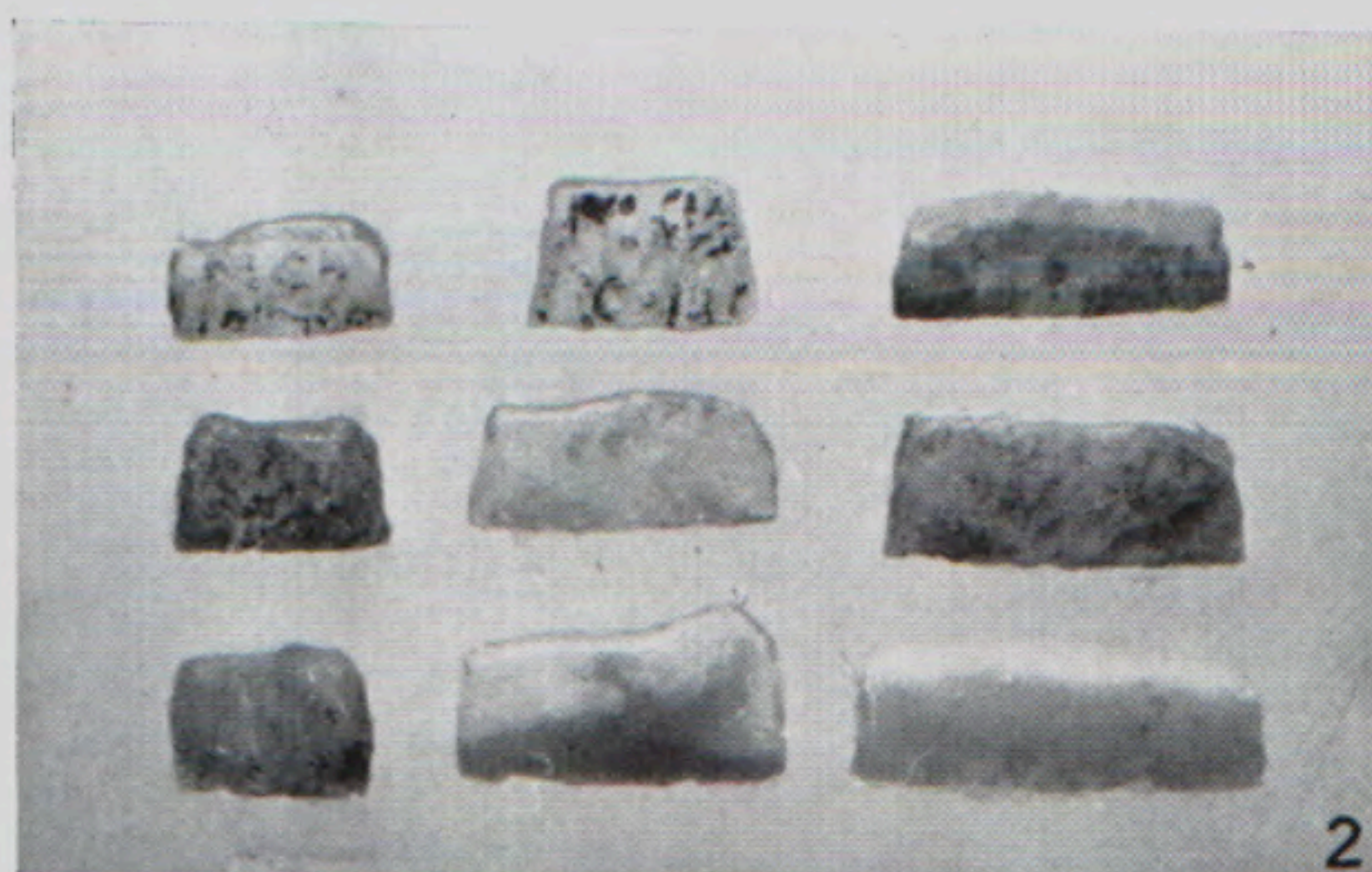


CRESCENTS, BACKED BLADES, *POINTES SCALÈNES*, AND *TRIANGLES SCALÈNES*

SCALE 1:1

PLATE 14
BORERS, ETC.

1. Crescents with scalloped tips.
2. Rectangular quartz flakes trimmed at back and both sides.
3. Possible quartz fish-hooks.
4. Wilton-type slug borers. (Three are also illustrated by line drawings on Pl. 15, Figs. 9-11.)
5. Borers worked on crescents. (One is also illustrated by line drawing on Pl. 15, Fig. 12.)
6. Borers worked on rough flakes.



5

6

BORERS, ETC.
SCALE 1:1

PLATE 15

CHISEL-TYPE ARROW HEADS

1. Thick quartz crescent with rounded back. M 23, 150-70 cm. (See also Pl. 12, Fig. 9.)
2. Thick quartz crescent with rounded back. M 21 (2/6). (See also Pl. 12, Fig. 9.)
3. Quartz crescent with rounded back. (See also Pl. 12, Fig. 9.)
4. Quartz crescent with rounded back. M 24, 120-40 cm. (See also Pl. 12, Fig. 9.)
5. Quartz *trapèze*. (See also Pl. 12, Fig. 8.)
6. Quartz *trapèze*. M 27, 120-40 cm. (See also Pl. 12, Fig. 8.)
7. Quartz *triangle*. (See also Pl. 12, Fig. 7.)
8. Carnelian *triangle*. (See also Pl. 12, Fig. 7.)

BORERS

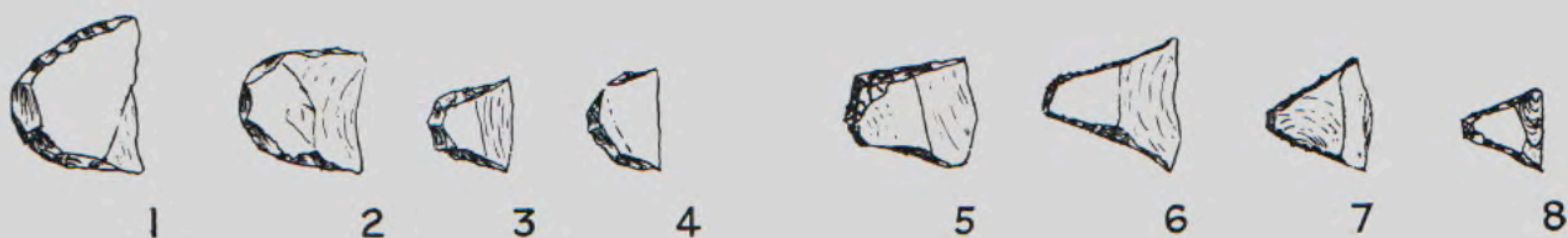
9. Quartz slug borer. (See also Pl. 14, Fig. 4.)
10. Quartz slug borer. (See also Pl. 14, Fig. 4.)
11. Quartz slug borer. (See also Pl. 14, Fig. 4.)
12. Quartz crescent with ends carefully worked to a fine point, ? for boring. M 23, 90-110 cm. (See also Pl. 14, Figs. 1 and 5.)

BURINS

13. Quartz burin (cortex of pebble remaining at functional end). (See also Pl. 20, Fig. 4.)
14. Quartz burin (cortex of pebble remaining at functional end). (See also Pl. 20, Fig. 4.)
15. Quartz burin (cortex of pebble remaining at non-functional end). (See also Pl. 20, Fig. 4.)
16. Quartz burin (cortex of pebble remaining at functional end). M 28, 100-20 cm. (See also Pl. 20, Fig. 4.)

PEBBLE FABRICATORS

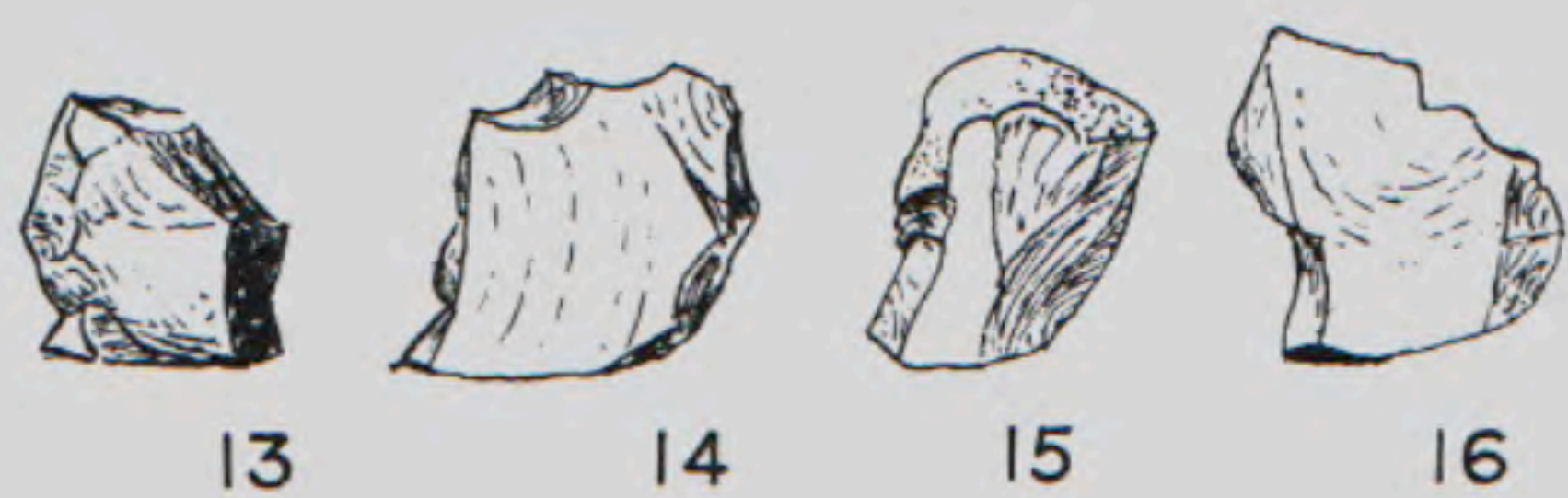
17. Pebble fabricator KH 459: rhyolite. (See also Pl. 24, Fig. 3.)
18. Pebble fabricator KH 425: rhyolite (two views). (See also Pl. 24, Fig. 2.)



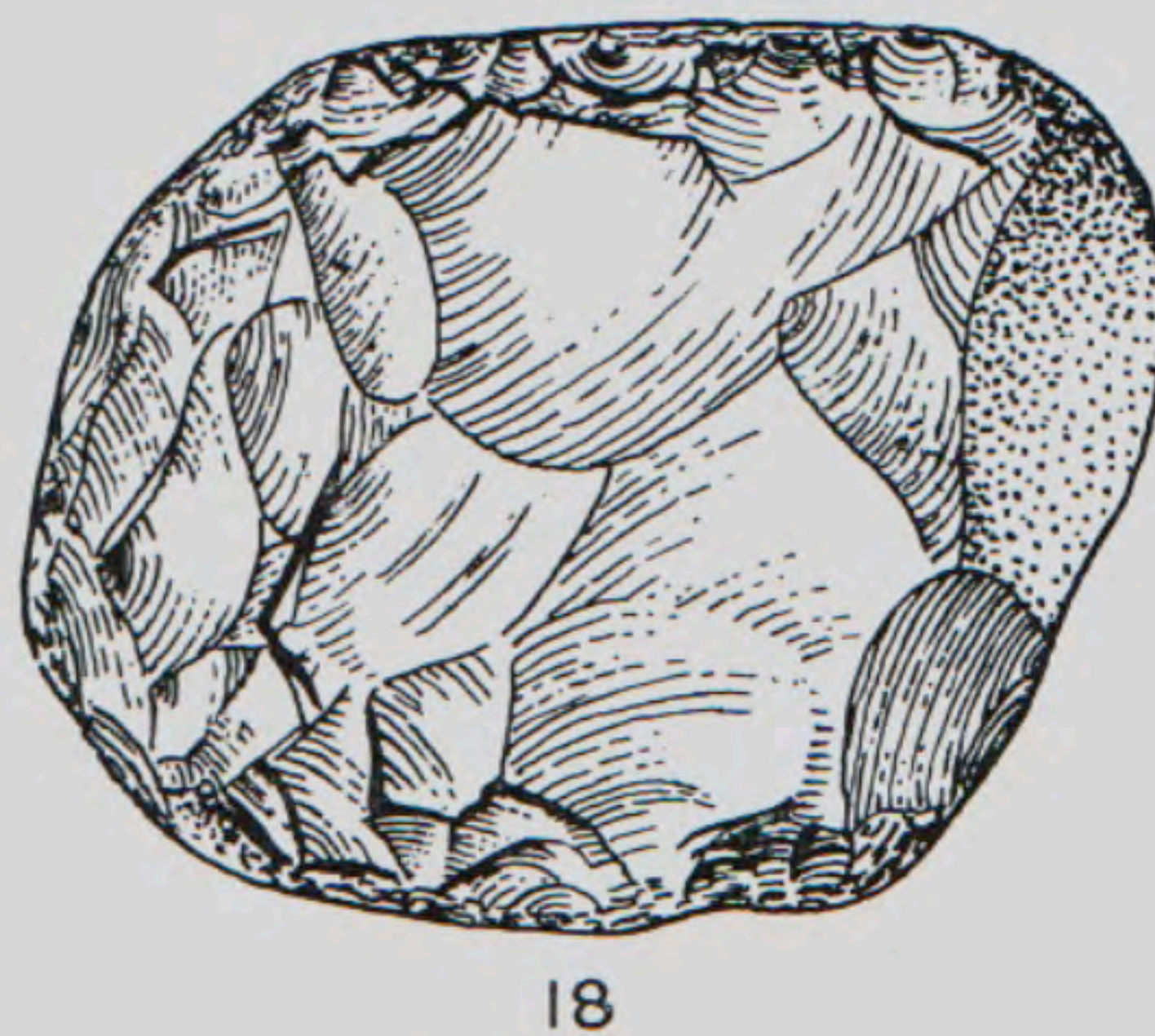
Chisel-type Arrow heads



Borers



Burins



Pebble fabricators

PLATE 16

CRESCENT SCRAPERS

1. Crescent scrapers of quartz.
2. Crescent scraper of rhyolite (also illustrated by line drawing on Pl. 21, Fig. 11).
3. Crescent scrapers of rhyolite with bulb remaining. (The one in the bottom right-hand corner is also illustrated by line drawing on Pl. 21, Fig. 3.)
4. Crescent scrapers of rhyolite with no bulb.



CRESCENT SCRAPERS
SCALE 1:1

PLATE 17

SCRAPERS ON BULBAR END OF FLAKE

1. Scrapers on bulbar end of flake, used on one side only.
2. Scrapers on bulbar end of flake, used on both sides.
- 2A. (Reverse of 2.)
3. Straight scrapers on bulbar end of flake. (One is also illustrated by line drawing on Pl. 21, Fig. 5.)



SCRAPERS ON BULBAR END OF FLAKE

SCALE 1:1

PLATE 18

SCRAPERS ON SIDE OF FLAKE AND
STRAIGHT-SIDED SCRAPERS

1. Scrapers on side of flake with bulb remaining. (One is also illustrated by line drawing on Pl. 21, Fig. 7.)
2. Scrapers on side of flake with no bulb remaining.
3. Scrapers on side of flake, with additional trimming. (One is also illustrated by line drawing on Pl. 21, Fig. 6.)
4. Straight-sided scrapers.



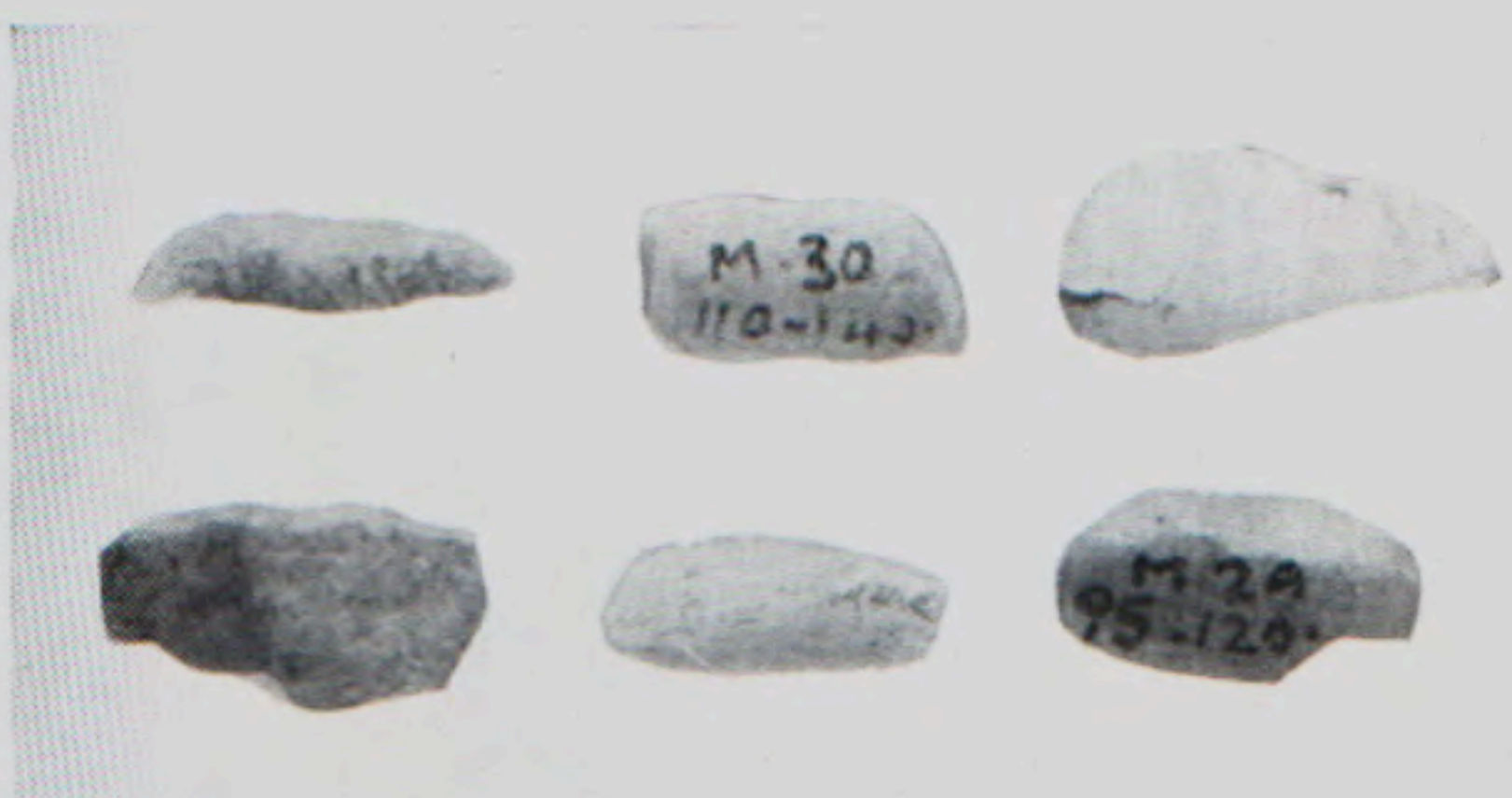
1



2



3



4

SCRAPERS ON SIDE OF FLAKE AND STRAIGHT-SIDED SCRAPERS

SCALE 1:1

PLATE 19

END AND HOLLOW SCRAPERS

1. End scrapers. (See also Pl. 21, Fig. 13.)
2. Scrapers on plunging end of flake. (See also Pl. 21, Fig. 16.)
3. Hollow scrapers. (See also Pl. 21, Figs. 17 and 18.)
4. Hollow scrapers on crescents.
5. Hollow scrapers on backs of backed flakes.



END AND HOLLOW SCRAPERS
SCALE 1:1

PLATE 20

SCRAPERS AND BURINS

1. Quartz core scrapers.
2. Crescent-like scrapers backed at one end and trimmed all along the edge. (The rhyolite specimen is also illustrated by line drawing on Pl. 21, Fig. 12.)
3. Burins.
4. Burins. (See also Pl. 15, Figs. 13-16.)



4

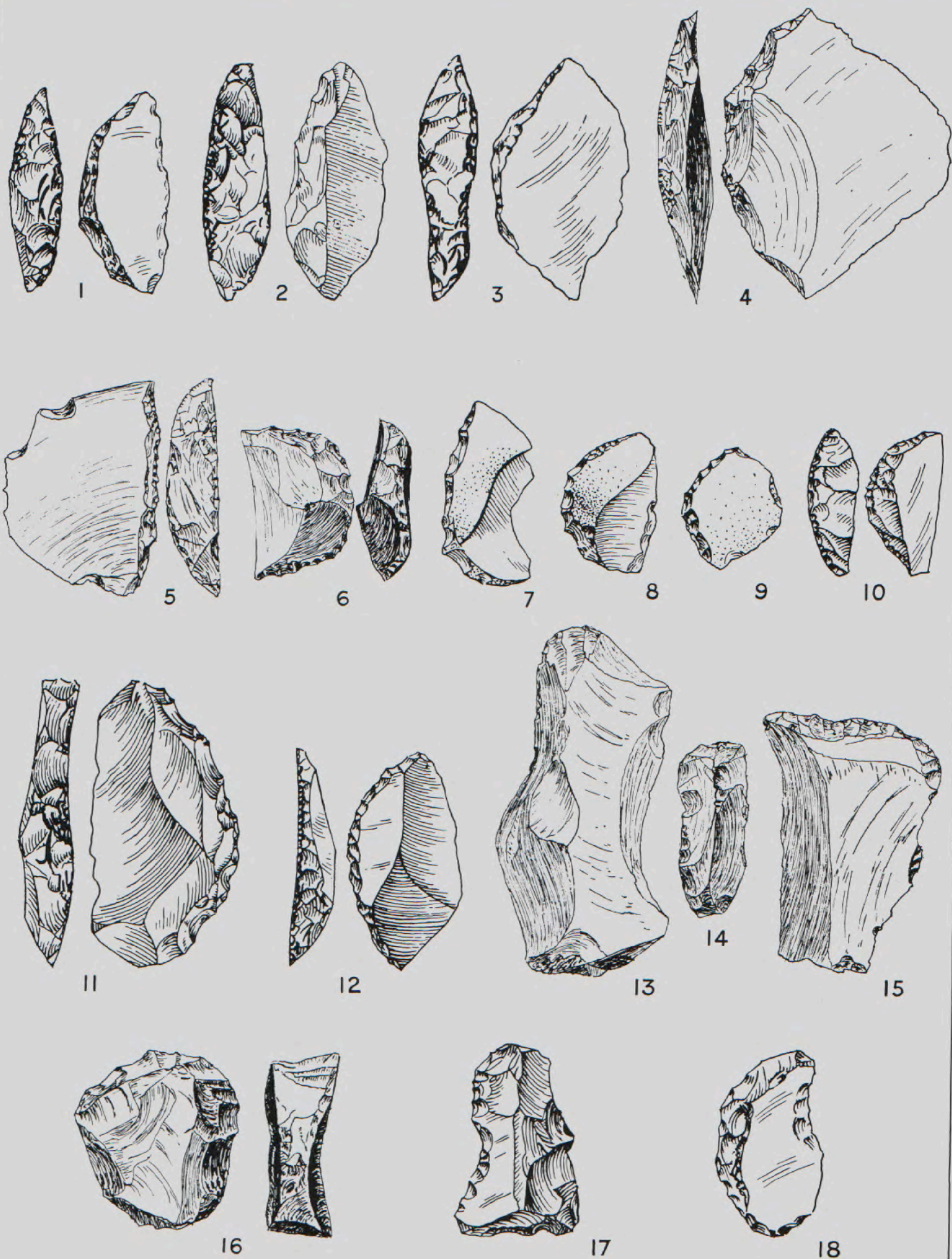
SCRAPERS AND BURINS

SCALE 1:1

PLATE 21

SCRAPERS

1. Crescent scraper (no bulb): rhyolite.
2. Crescent scraper (no bulb): rhyolite.
3. Crescent scraper on bulbar end of flake (bulb remaining): rhyolite. M 24, 100-20 cm. (See also Pl. 16, Fig. 3.)
4. Crescent scraper on bulbar end of flake (bulb remaining): rhyolite.
5. Straight scraper ? on bulbar end of flake: rhyolite. (See also Pl. 17, Fig. 3.)
6. Crescent scraper on side of flake (bulb remaining): rhyolite. (See also Pl. 18, Fig. 3.)
7. Crescent scraper on side of flake (bulb remaining): quartz. (See also Pl. 18, Fig. 1.)
8. Crescent scraper on side of flake (bulb remaining): quartz. M 22, 160-80 cm.
9. Crescent scraper on back of flake (no bulb): quartz.
10. Crescent scraper on flake, fully trimmed at one end only: quartz.
11. Crescent scraper on side of flake (bulb remaining): rhyolite. (See also Pl. 16, Fig. 2.)
12. Crescent scraper on flake, fully trimmed at one end only: rhyolite. (See also Pl. 20, Fig. 2.)
13. End scraper on distal end of coarse flake: rhyolite. (See also Pl. 19, Fig. 1.)
14. End scraper: rhyolite.
15. Scraper on plunging end of plunging flake: rhyolite.
16. Scraper on plunging end of plunging flake: rhyolite. (See also Pl. 19, Fig. 2.)
17. Hollow scraper on coarse flake: rhyolite. (See also Pl. 19, Fig. 3.)
18. Hollow scraper on crescent ? scraper: rhyolite. (See also Pl. 19, Fig. 3.)



SCRAPERS

SCALE 1:1

PLATE 22

TRIMMED AND UTILIZED FLAKES

1. Trimmed flakes of rhyolite and mudstone (two views of each flake).
2. Utilized thick flakes (two views).
3. Trimmed flakes of rhyolite and ferricrete sandstone from cores with prepared platforms (actual size).



TRIMMED AND UTILIZED FLAKES

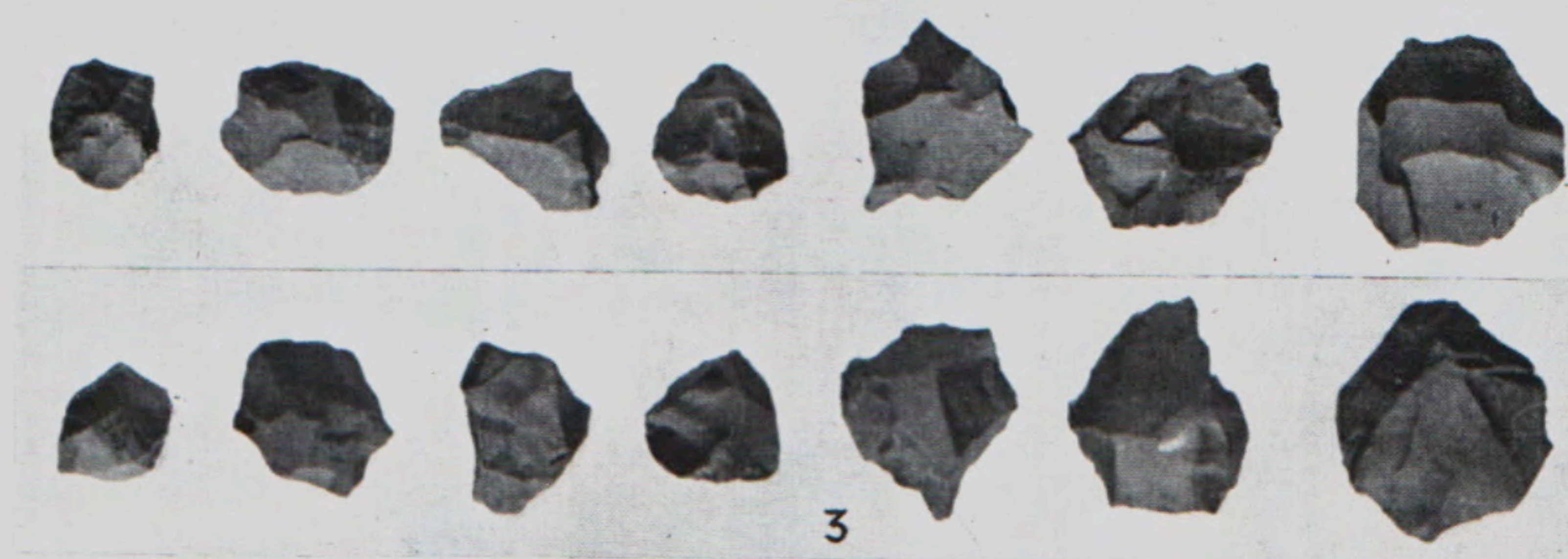
FIGS. 1, 2 SCALE 3:8

FIG. 3 SCALE 1:1

PLATE 23

CORES

1. Quartz cores (actual size).
2. Quartz cores perhaps purposely worked as tools (actual size).
3. Small rhyolite cores (two views of each core—scale 2:5).
4. Rhyolite cores (two views of each core—scale 2:5).
5. Rhyolite cores (scale 2:5).
6. Ferricrete sandstone cores (scale 2:5).



CORES
FIGS. 1, 2 SCALE 1:1
FIGS. 3-6 SCALE 2:5

PLATE 24

PEBBLE FABRICATORS

1. Rhyolite pebble fabricator from conventional layer 160-80 cm. in square M 28.
2. Rhyolite pebble fabricator K.H. 425 (two views—see also Pl. 15, Fig. 18).
3. Pebble fabricator made from rhyolite core, K.H. 459 (two views—see also Pl. 15, Fig. 17).



1



2



3

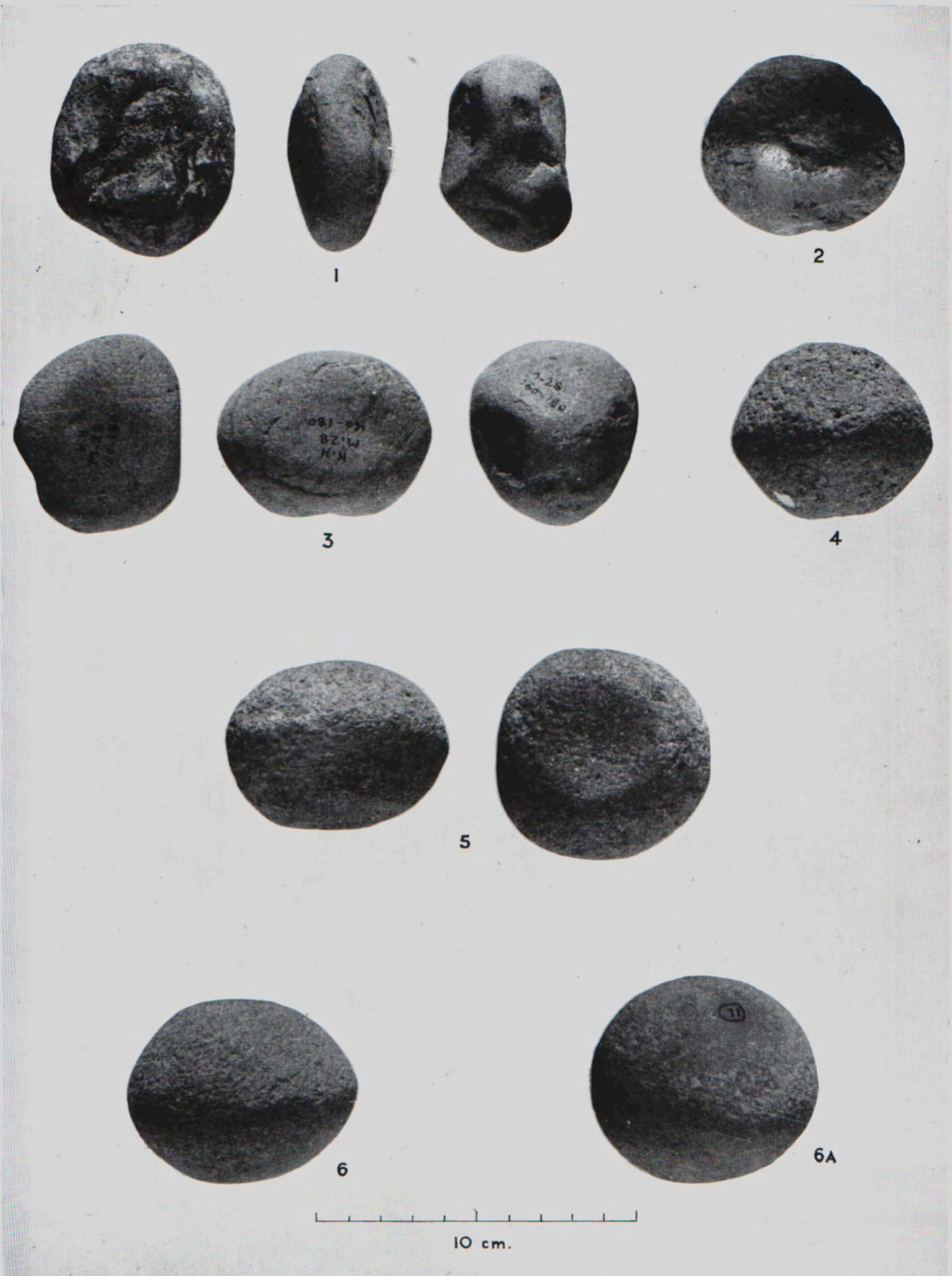


PEBBLE FABRICATORS
SCALE 1:1

PLATE 25

PEBBLE HAMMER-STONES AND PEBBLE
GRINDERS

1. Three gneiss pebble hammer-stones.
2. Gneiss pebble hammer-stone with one polished face.
3. Three gneiss pebble hammer-stones each with one smooth face
from conventional layer 160–80 cm. in square M 28.
4. Pebble grinder with keel, K.H. 72 (see also Pl. 27, Fig. 1).
5. Pebble grinder with a keel and a flat polished face, K.H. 69
(two views—see also Pl. 27, Fig. 2).
6. Pebble grinder with keel, K.H. 71.
- 6A. Ditto, showing the polished face.



PEBBLE HAMMER-STONES AND PEBBLE GRINDERS
SCALE 2:3

PLATE 26

SANDSTONE GRINDERS STAINED WITH
OCHRE

1. R 23 (7).
2. K.H. 1304 (two views—see also Pl. 27, Fig. 4).
3. K.H. 418.
4. K.H. 215 (three views—see also Pl. 27, Fig. 6).
5. K.H. 436.
6. K.H. 422.
7. K.H. 431.

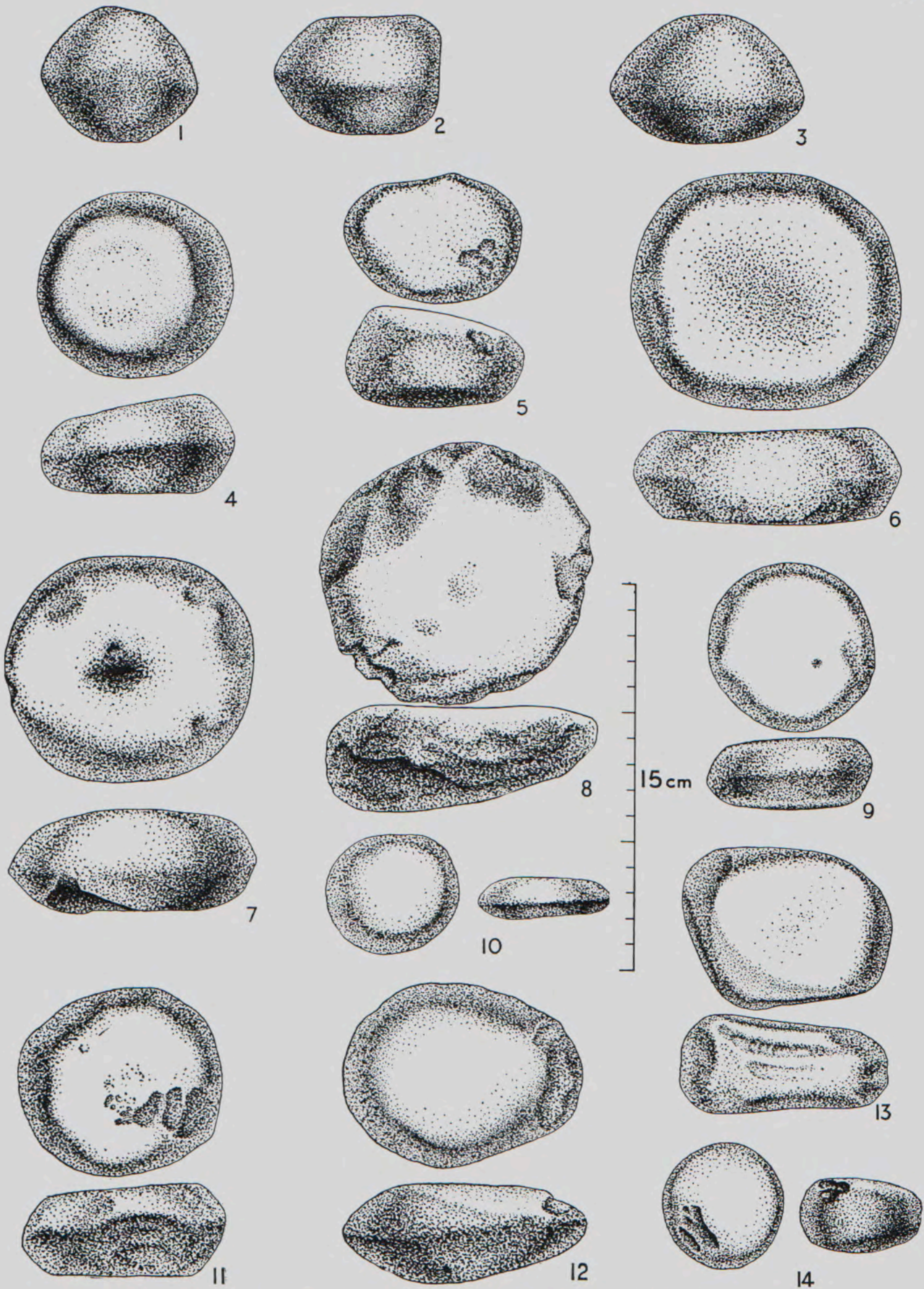


SANDSTONE GRINDERS STAINED WITH OCHRE
SCALE 2:3

PLATE 27

SANDSTONE ARTIFACTS, PROBABLY ALL
USED FOR GRINDING OCHRE

1. Pebble grinder with keel, K.H. 72. (See also Pl. 25, Fig. 4.)
2. Pebble grinder with keel, K.H. 69. (See also Pl. 25, Fig. 5.)
3. Sandstone grinder with keel, stained with ochre, K.H. 402.
4. Sandstone disk grinder with keel, stained with ochre, K.H. 1304 (two views—see also Pl. 26, Fig. 2).
5. Sandstone grinder stained with ochre, K.H. 1310 (two views).
6. Sandstone disk grinder stained with ochre, K.H. 215 (two views—see also Pl. 26, Fig. 4).
7. Sandstone disk grinder with incipient keel. several flakes struck from the edge, and a smooth face with marked pitting, K.H. 1319 (two views).
8. Grinder of silcrete sandstone with several flakes struck from the edge, K.H. 1312 (two views).
9. Sandstone disk grinder with a keel and two polished faces, K.H. 420 (two views—see also Pl. 28, Fig. 1).
10. Sandstone disk with a keel and one smooth flat face, K.H. 1307 (two views—see also Pl. 39, Fig. 3).
11. Sandstone disk grinder with irregular keel and a smooth face irregularly pitted, K.H. 1311 (two views).
12. Sandstone grinder of unusual shape with a keel and a smooth face, M 27 (60)—two views.
13. Atypical sandstone grinder with incipient keel and two smooth faces, K.H. 246 (two views).
14. Sandstone disk with two smooth faces and some flakes struck from one edge, K.H. 1306 (two views).



SANDSTONE ARTIFACTS, PROBABLY ALL USED FOR GRINDING OCHRE

SCALE 1:2

PLATE 28

SANDSTONE GRINDERS, PROBABLY USED
FOR GRINDING OCHRE

1. Sandstone disk grinder with a keel and two polished faces, K.H. 420 (two views—see also Pl. 27, Fig. 9).
2. Sandstone grinder with two flat sides, K 15 (2) 1 (two views—see also Pl. 31, Fig. 2).
3. Sandstone disk grinder with concave upper side and flat smooth underside, K.H. 213 (two views—see also Pl. 29, Fig. 3).



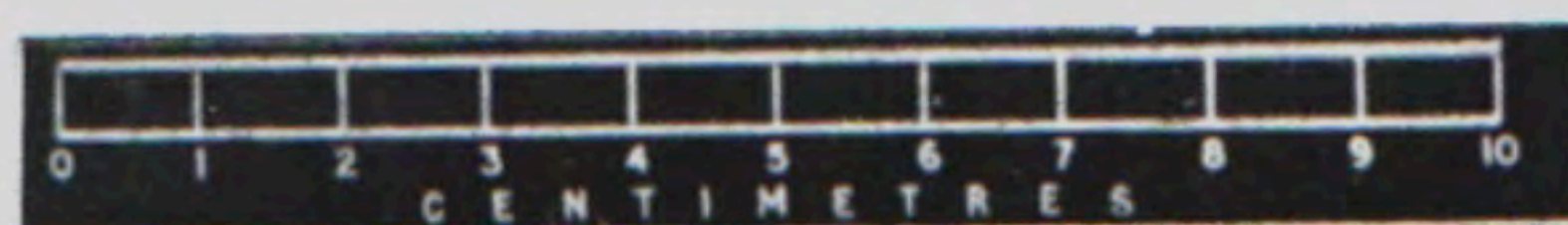
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2



3

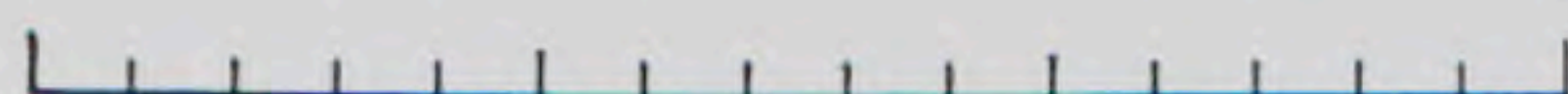
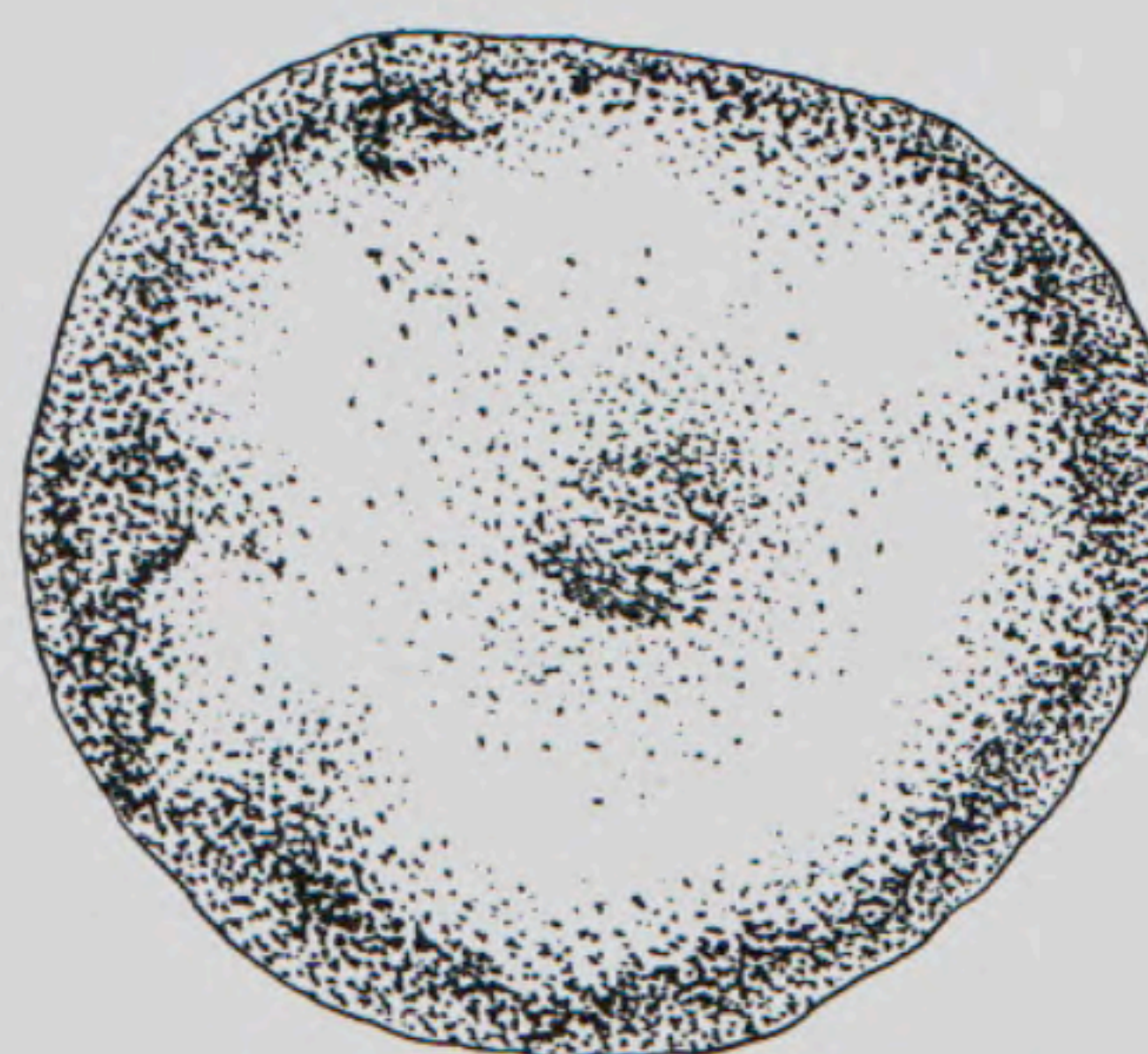
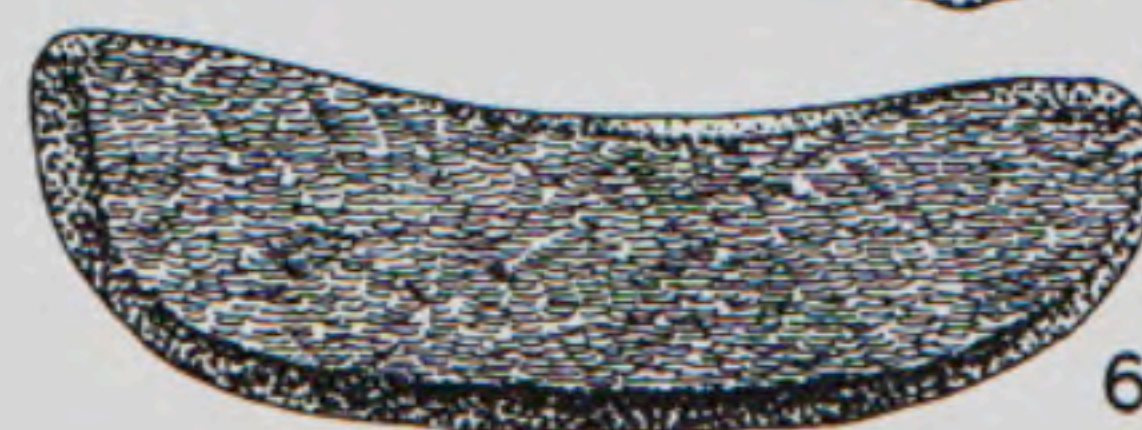
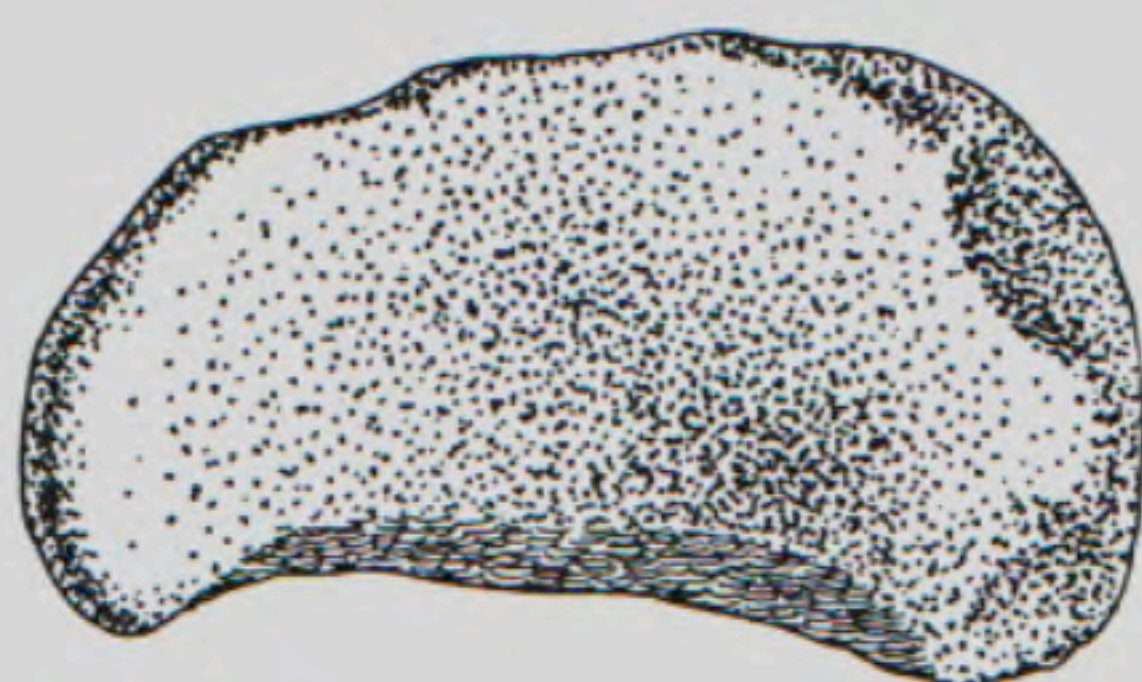
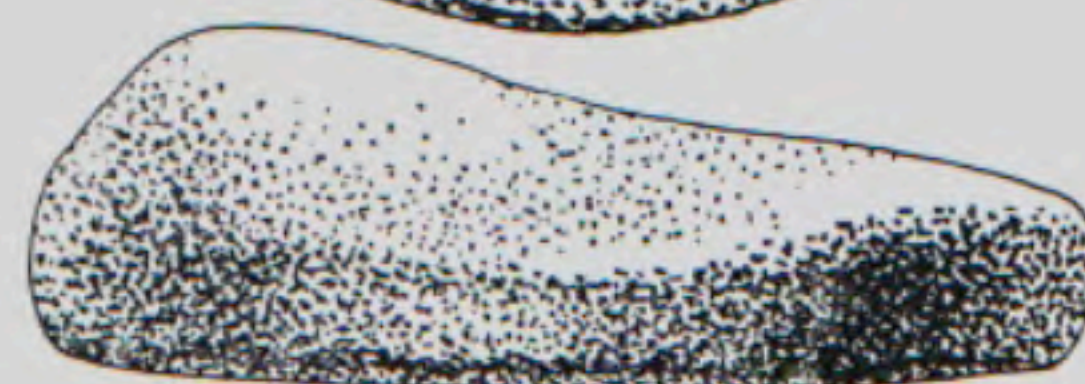
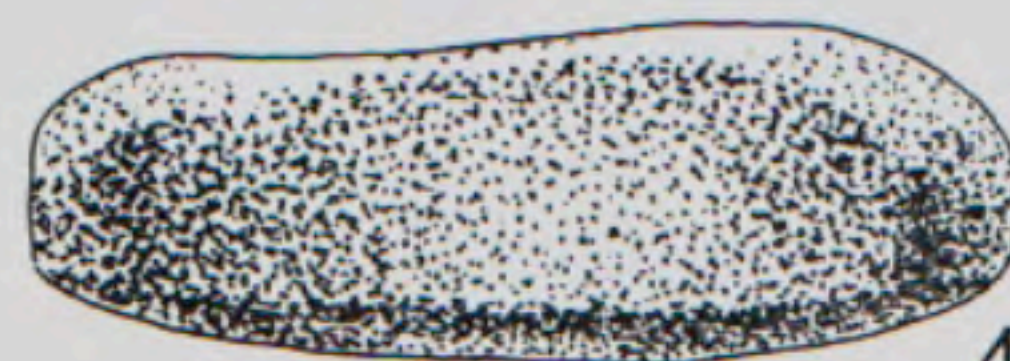
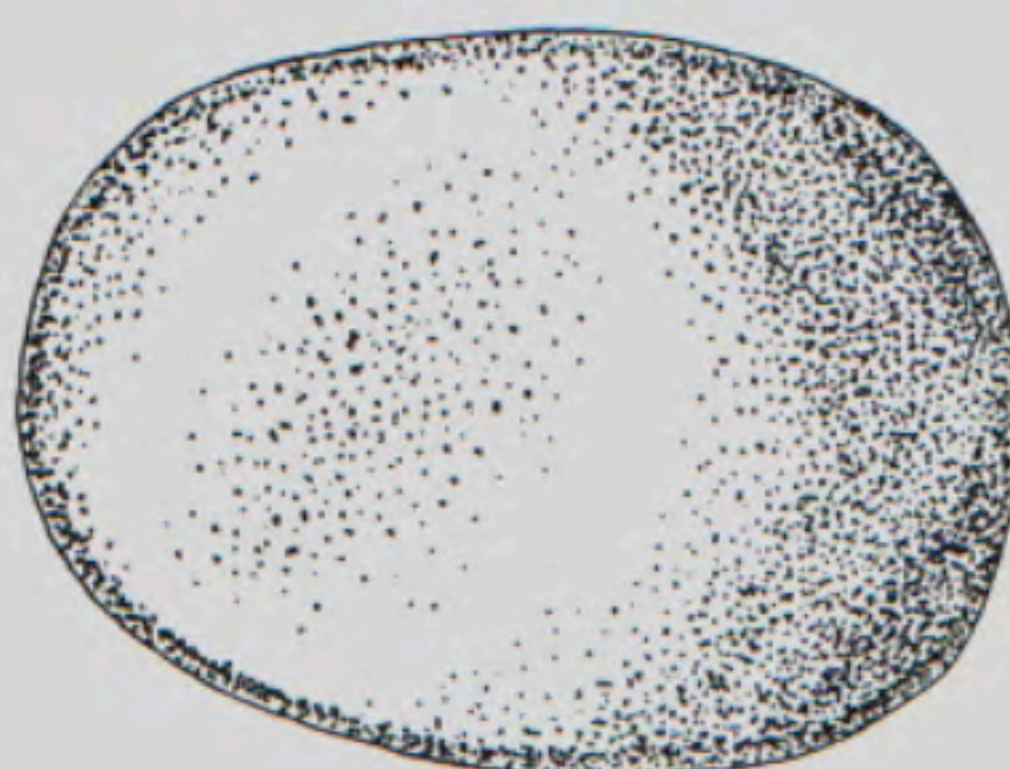
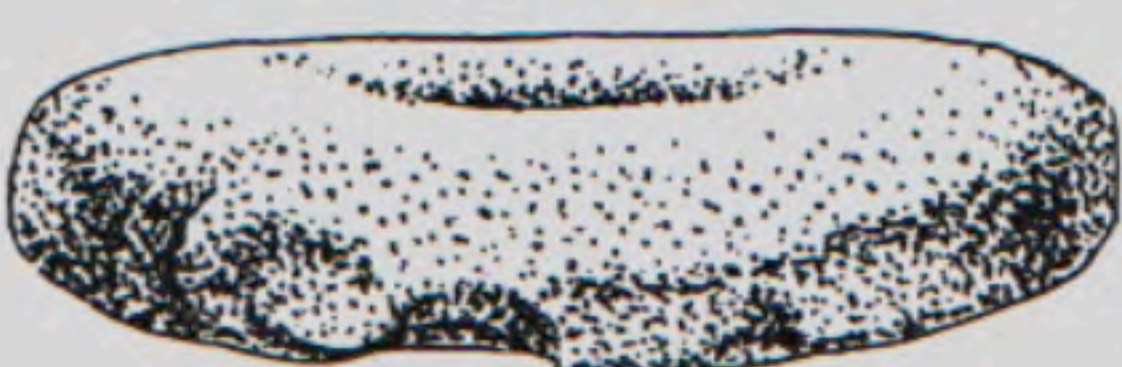
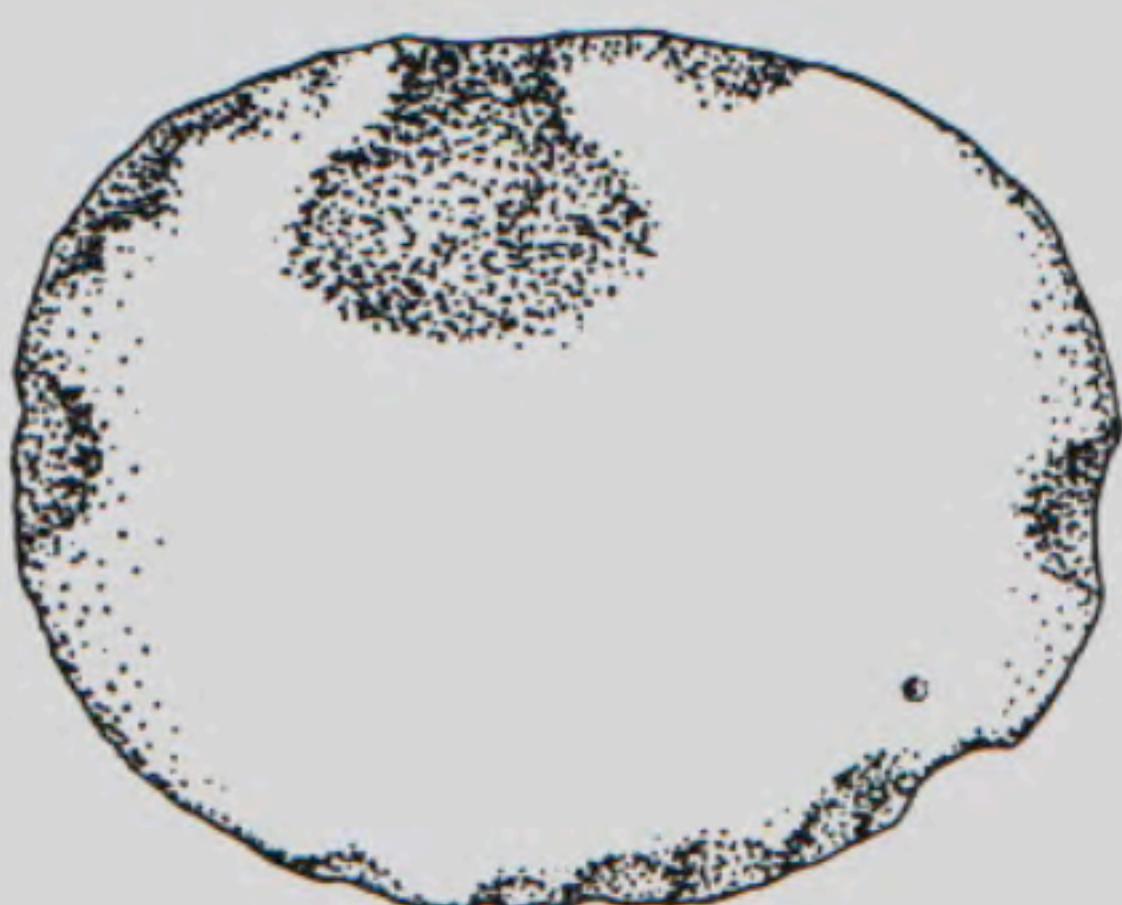
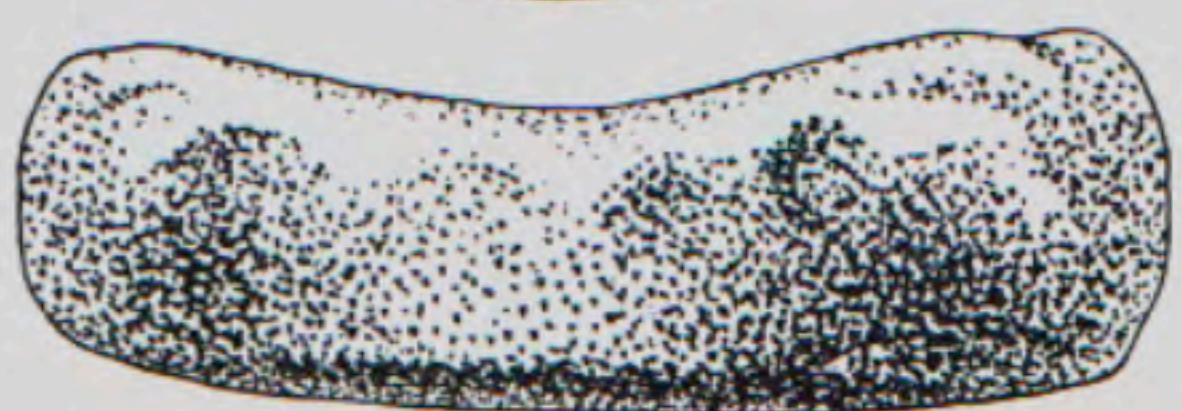
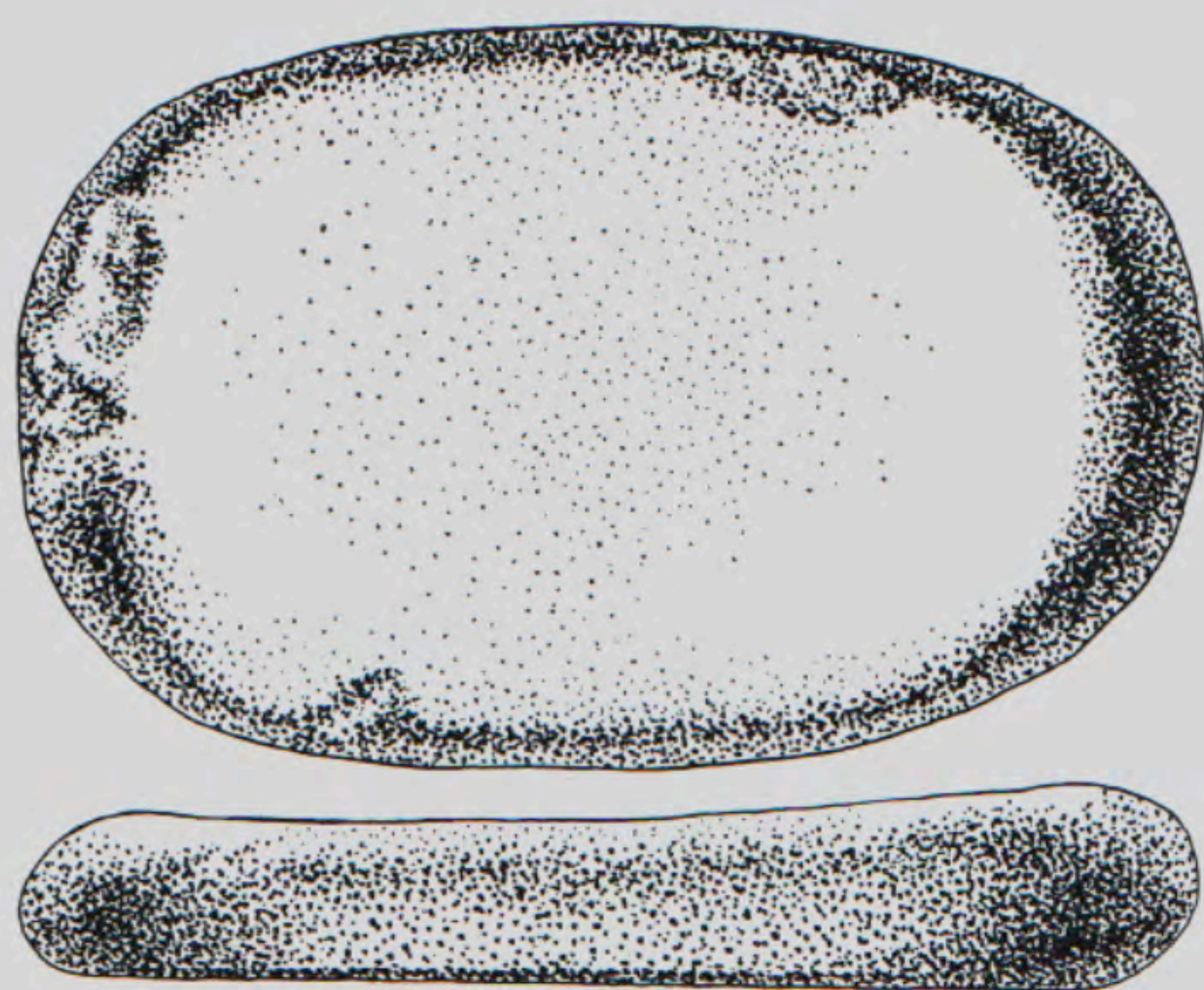


SANDSTONE GRINDERS, PROBABLY USED FOR GRINDING OCHRE
SCALE 2:3

PLATE 29

SANDSTONE DISK GRINDERS WITH ONE
CONCAVE SIDE, PROBABLY ALL USED
FOR GRINDING OCHRE

1. Sandstone disk grinder with concave upper side and smooth underside, N 19 (6) (two views).
2. Sandstone disk grinder with concave upper side and smooth underside, K.H. 1303 (two views).
3. Sandstone disk grinder with concave upper side and smooth underside, K.H. 213 (two views—see also Pl. 28, Fig. 3).
4. Sandstone disk grinder with concave upper side and smooth underside, K.H. 1308 (two views).
5. Atypical sandstone disk grinder with concave upper side and slightly convex underside, K.H. 1302 (two views).
6. Fragment of an atypical sandstone grinder with markedly concave upper side and convex underside, K.H. M 31 II (13) (two views).
7. Sandstone disk grinder with pitted, slightly concave, upper side and rough underside, K.H. 1317 (two views).



15 cm

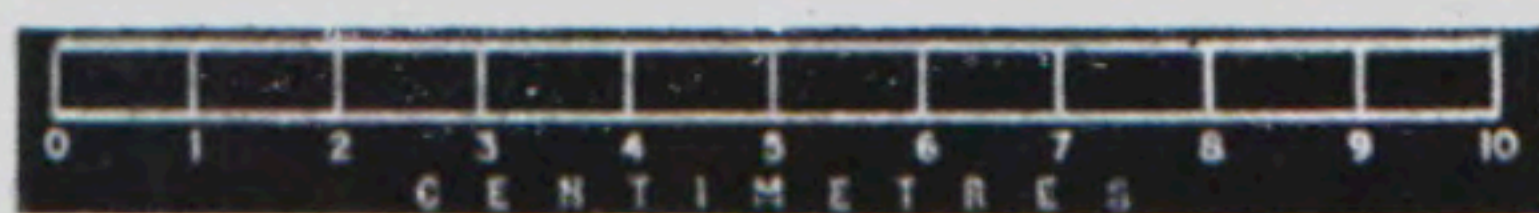
SANDSTONE DISK GRINDERS WITH ONE CONCAVE SIDE, PROBABLY ALL USED FOR GRINDING OCHRE

SCALE 1:2

PLATE 30

SANDSTONE GRINDERS WITH ANGULAR
FACE OR WITH PITTED FACE, PROBABLY
ALL USED FOR GRINDING OCHRE

1. Sandstone grinder with angular face, K.H. 169. (See also Pl. 31, Fig. 4.)
2. Sandstone grinder with one pitted face, K.H. 1305. (See also Pl. 32, Fig. 1.)
3. Sandstone grinder with one pitted face, K.H. 1318. (See also Pl. 32, Fig. 7.)
4. Sandstone grinder with two pitted faces, K.H. 216 (two views—see also Pl. 32, Fig. 3).



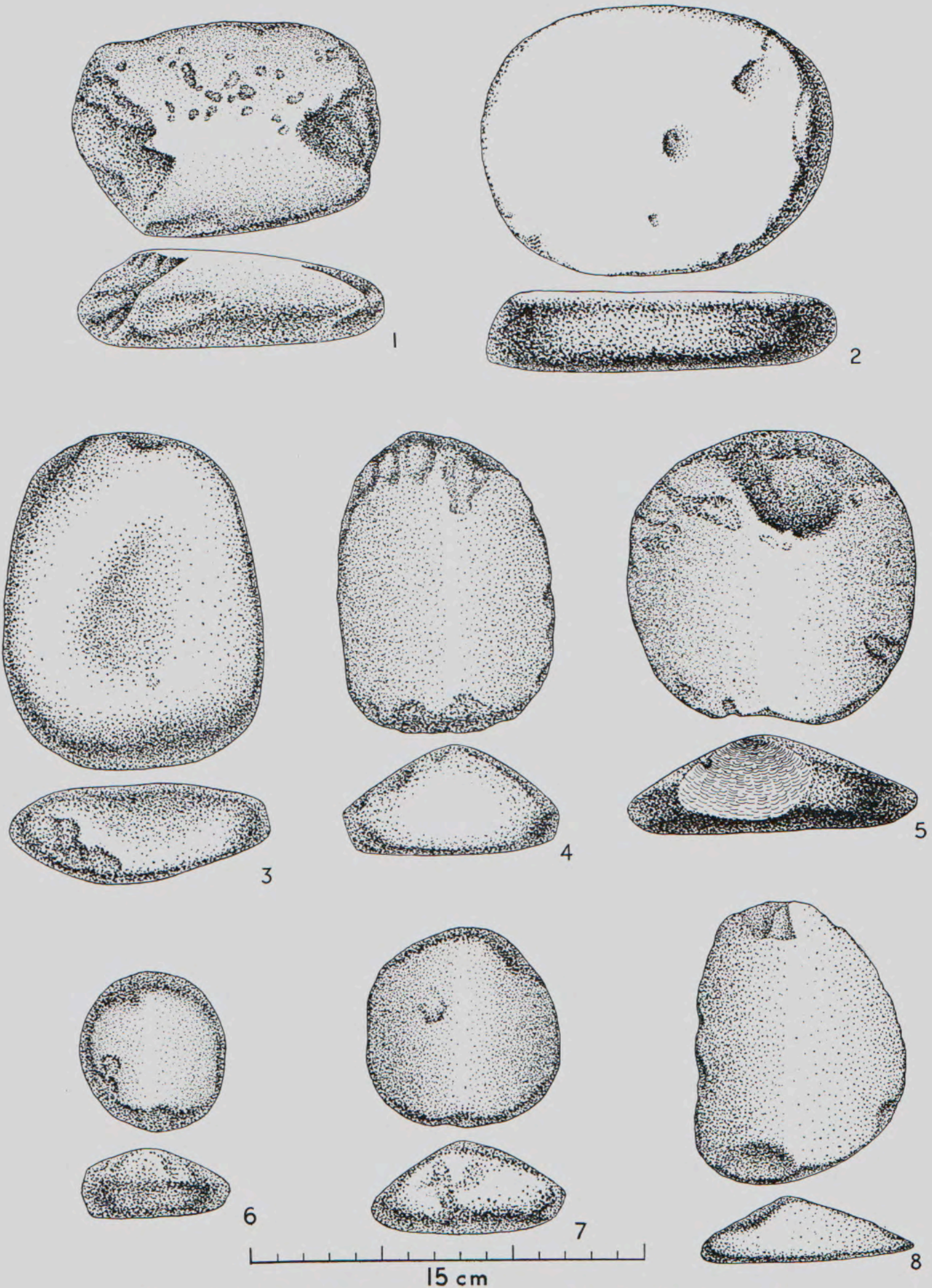
SANDSTONE GRINDERS WITH ANGULAR FACE OR WITH PITTED FACE,
PROBABLY ALL USED FOR GRINDING OCHRE

SCALE 2:3

PLATE 31

SANDSTONE GRINDERS, PROBABLY ALL
USED FOR GRINDING OCHRE

1. Sandstone grinder with one side flat and the other convex, its ends having been used as a hammer, K.H. 1313 (two views).
2. Sandstone grinder with two flat surfaces, K 15 (2) 1 (two views—see also Pl. 28, Fig. 2).
3. Sandstone grinder with hollowed upper surface and irregularly convex underside, K.H. 163 (two views).
4. Sandstone grinder with smooth angular underside, K.H. 169 (two views—see also Pl. 30, Fig. 1).
5. Sandstone grinder with smooth angular underside, K.H. 180 (two views).
6. Sandstone grinder with smooth angular underside, K.H. 181 (two views).
7. Sandstone grinder with one angular and one flat face, K.H. 183 (two views).
8. Sandstone grinder with one angular and one flat face, K.H. 171 (two views).

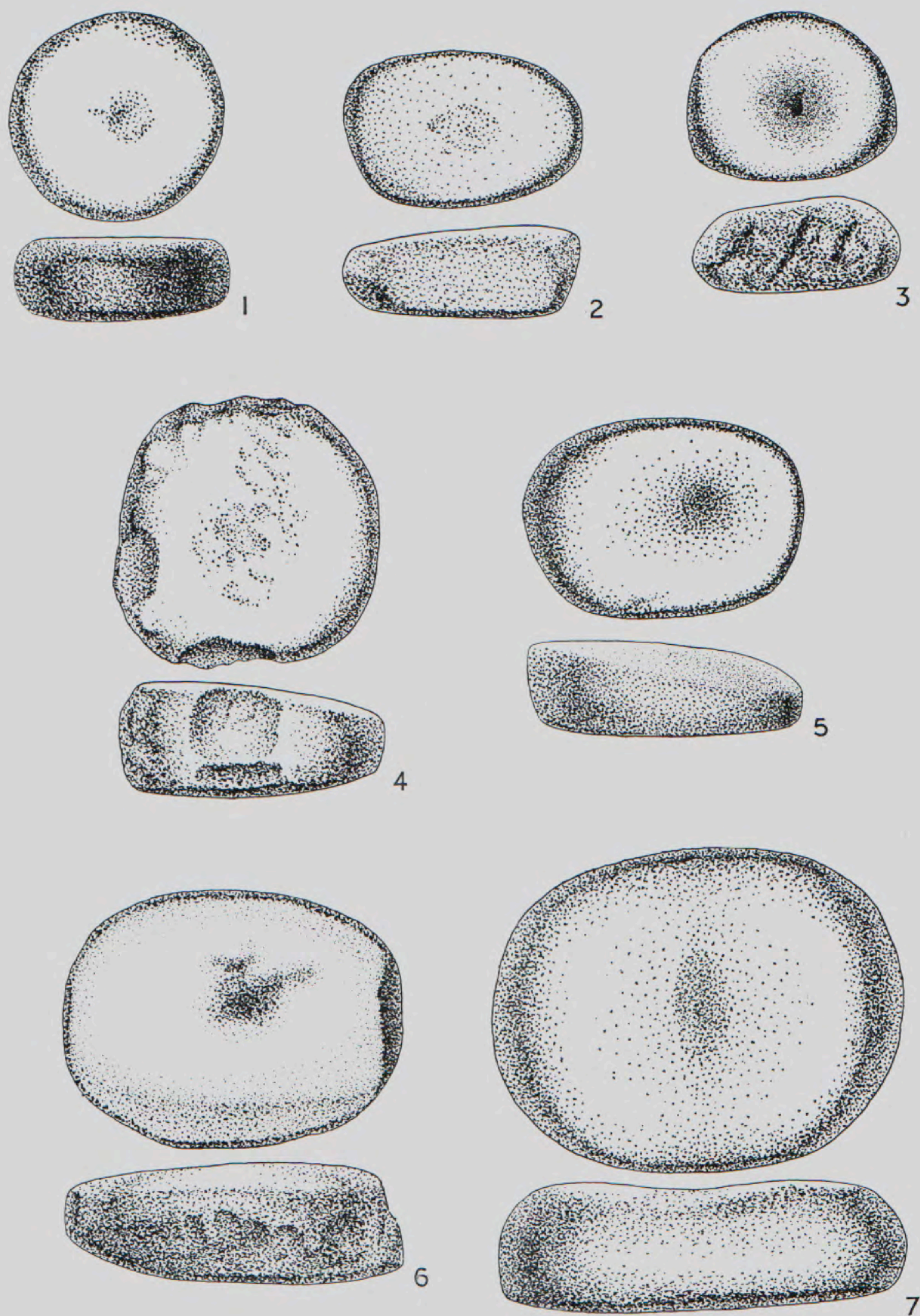


SANDSTONE GRINDERS, PROBABLY ALL USED FOR GRINDING OCHRE
SCALE 1:2

PLATE 32

SANDSTONE DISK GRINDERS WITH PITTED
FACES, PROBABLY ALL USED FOR GRIND-
ING OCHRE

1. Sandstone disk grinder with two smooth faces, one pitted, K.H. 1305 (two views—see also Pl. 30, Fig. 2).
2. Sandstone disk grinder with two flat faces, each pitted, K.H. 1315 (two views).
3. Sandstone disk grinder with a circular depression in each of two flat faces, K.H. 216 (two views—see also Pl. 30, Fig. 4).
4. Sandstone disk grinder with two flat faces each diffusely roughened, K.H. 1316 (two views).
5. Sandstone disk grinder with smooth convex underside and circular pit in rougher upper surface, K.H. 290 (two views).
6. Sandstone disk grinder with two slightly convex smooth faces, in the centre of each of which is a small pit, K.H. 1314 (two views).
7. Sandstone disk grinder with elongated pit in upper surface and with smooth lower surface, K.H. 1318 (two views—see also Pl. 30, Fig. 3).



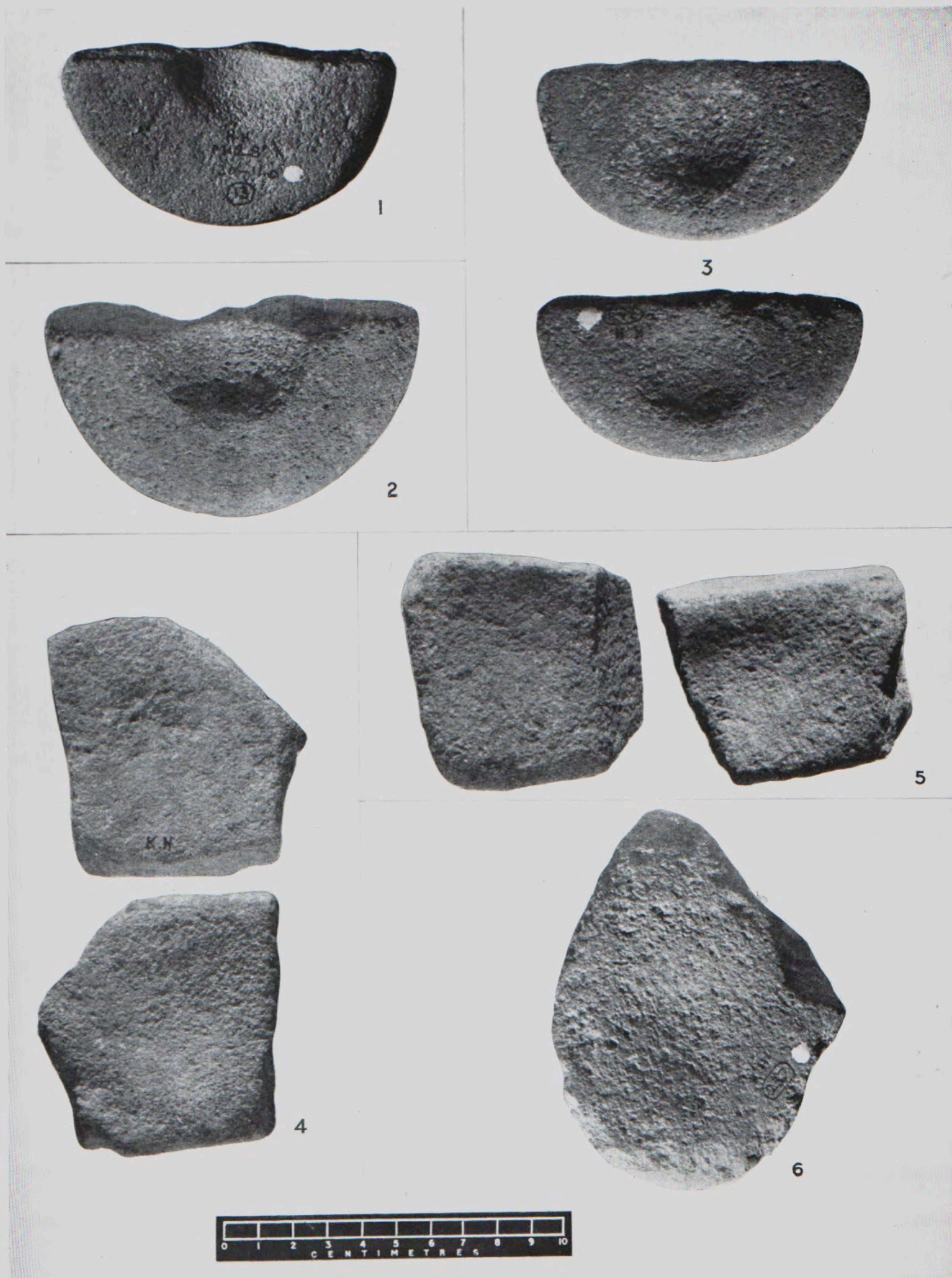
SANDSTONE DISK GRINDERS WITH PITTED FACES, PROBABLY ALL USED FOR GRINDING OCHRE

SCALE 1:2

PLATE 33

SANDSTONE GRINDERS WITH DEPRESSIONS
IN THE FACE, POSSIBLY PALETTES FOR
OCHREOUS PAINT

1. Semicircular fragment of a sandstone disk grinder which had a regular circular depression in the centre of each flat face before fracture, M 28 (13). (See also Pl. 36, Fig. 1.)
2. Semicircular fragment of a sandstone disk grinder which had a regular circular depression in the centre of each flat face before fracture, M 20 (5). (See also Pl. 36, Fig. 2.)
3. Semicircular fragment of a sandstone disk grinder with a regular circular depression in each face made after fracture, K.H. 248 (two views—see also Pl. 36, Fig. 5).
4. A roughly rectangular sandstone slab with a shallow depression in each face and pitting in one of them (two views).
5. A roughly rectangular sandstone slab with a shallow depression in each face (two views).
6. Fragment of an oval sandstone grinder with a shallow circular depression on one side made apparently after fracture, K.H. 237. (See also Pl. 36, Fig. 4.)



SANDSTONE GRINDERS WITH DEPRESSIONS IN THE FACE, POSSIBLY PALETTES FOR OCHREOUS PAINT

SCALE 2:3

PLATE 34

STONE RING FRAGMENTS SHOWING
DEVELOPMENT OF THE PERFORATION

1. A series of seven fragments photographed from each side, showing the development of the perforation from a small irregular hole to a regular hole of approximately 20 mm. diameter.
2. Another similar series of seven fragments.

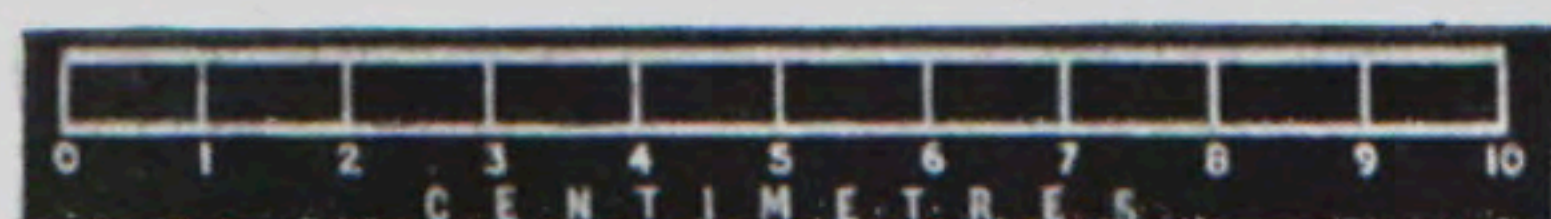


STONE RING FRAGMENTS SHOWING DEVELOPMENT OF THE PERFORATION
SCALE 2:5

PLATE 35

STONE RING FRAGMENTS

- 1, 1A. K.H. 126 (three views—see also Pl. 36, Fig. 6).
2. K.H. 1300 (two views—see also Pl. 36, Fig. 7).
3. K.H. 1301 (two views—see also Pl. 36, Fig. 8).
4. M 30 (6) (two views—see also Pl. 36, Fig. 9).

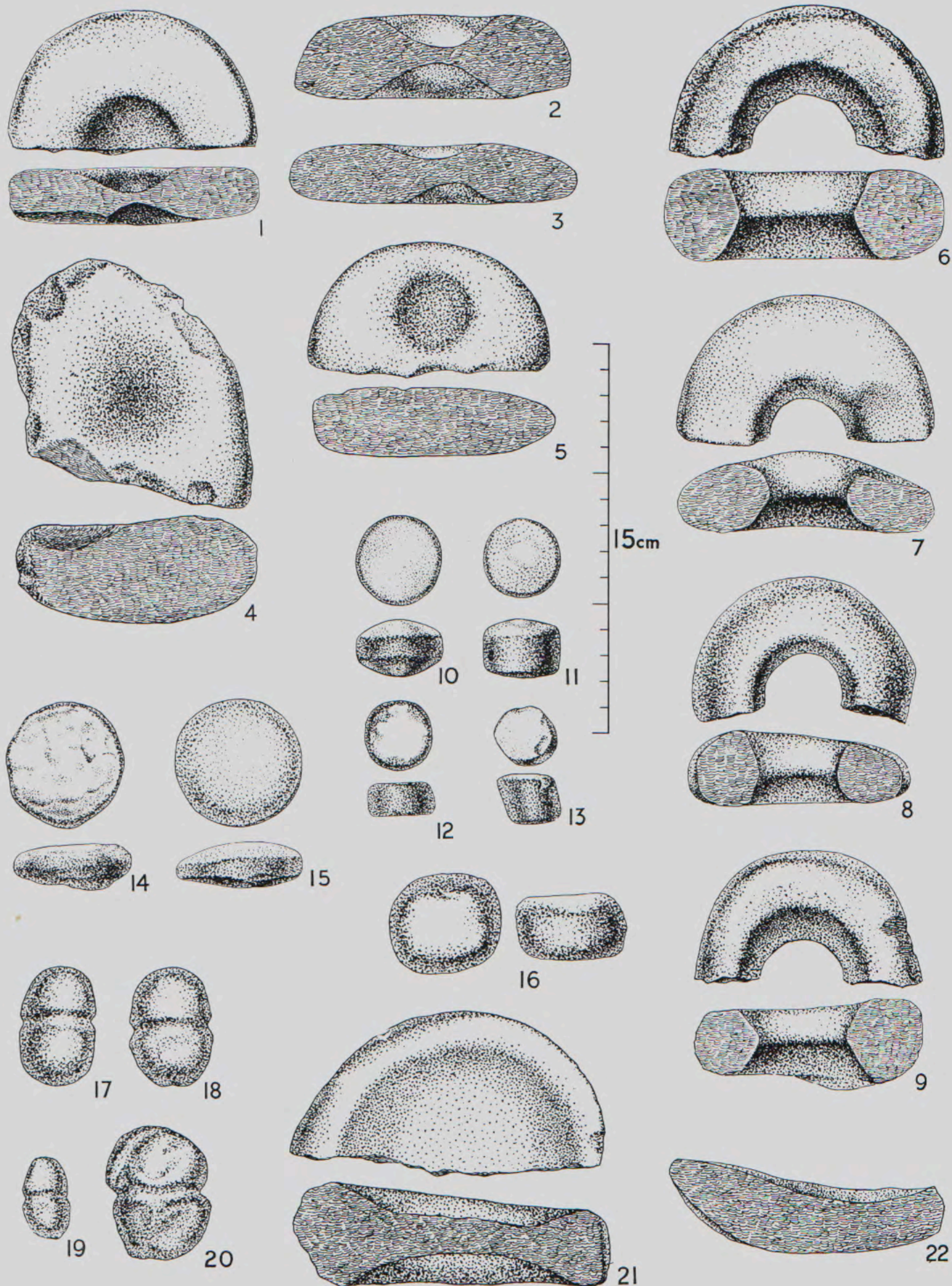


STONE RING FRAGMENTS
SCALE 7:10

PLATE 36

STONE RING FRAGMENTS, SMALL DISK
RUBBERS, ? LINE SINKERS, ETC.

1. Semicircular fragment of sandstone disk grinder which had a regular circular depression in the centre of each face, M 28 (13) (two views—see also Pl. 33, Fig. 1).
2. Ditto, M 20 (5). (See also Pl. 33, Fig. 2.)
3. Semicircular fragment of sandstone disk grinder which had a circular depression in each face, but not exactly opposite each other, K.H. 91.
4. Shallow circular depression on one side of a fragment of an oval sandstone grinder, K.H. 237 (two views—see also Pl. 33, Fig. 6).
5. Semicircular fragment of sandstone disk grinder with a circular depression in the centre of each face made apparently after the fracture, K.H. 248 (two views). (See also Pl. 33, Fig. 3.)
6. Stone ring fragment, K.H. 126 (two views—see also Pl. 35, Fig. 1).
7. Stone ring fragment, K.H. 1300 (two views—see also Pl. 35, Fig. 2).
8. Stone ring fragment, K.H. 1301 (two views—see also Pl. 35, Fig. 3).
9. Stone ring fragment, M 30 (6) (two views—see also Pl. 35, Fig. 4).
10. Small sandstone disk rubber, L 19 (1) (two views—see also Pl. 39, Fig. 4).
11. Small sandstone disk rubber, L 18 (1) (two views—see also Pl. 39, Fig. 4).
12. Small sandstone disk rubber, L 22 (2) (two views—see also Pl. 39, Fig. 4).
13. Small sandstone disk rubber, L 24 (8) (two views—see also Pl. 39, Fig. 4).
14. Small sandstone disk rubber, M 26 (39) (two views—see also Pl. 39, Fig. 3).
15. Small sandstone disk rubber, K.H. 49 (two views—see also Pl. 39, Fig. 3).
16. Rough sandstone rubber with a smooth face, K.H. 1309 (two views—see also Pl. 39, Fig. 5).
17. ? Fishing-line sinker, K 26 (9). (See also Pl. 40, Fig. 1.)
18. ? Fishing-line sinker, M 26 (5). (See also Pl. 40, Fig. 1.)
19. ? Fishing-line sinker, X 28. (See also Pl. 40, Fig. 1.)
20. ? Fishing-line sinker, J 14 (8). (See also Pl. 40, Fig. 3.)
21. Fragment of sandstone disk grinder with large circular depression in each face, K.H. 209 (two views—see also Pl. 45, Fig. 1).
22. Sandstone fragment, possibly part of a stone dish, K.H. 261.



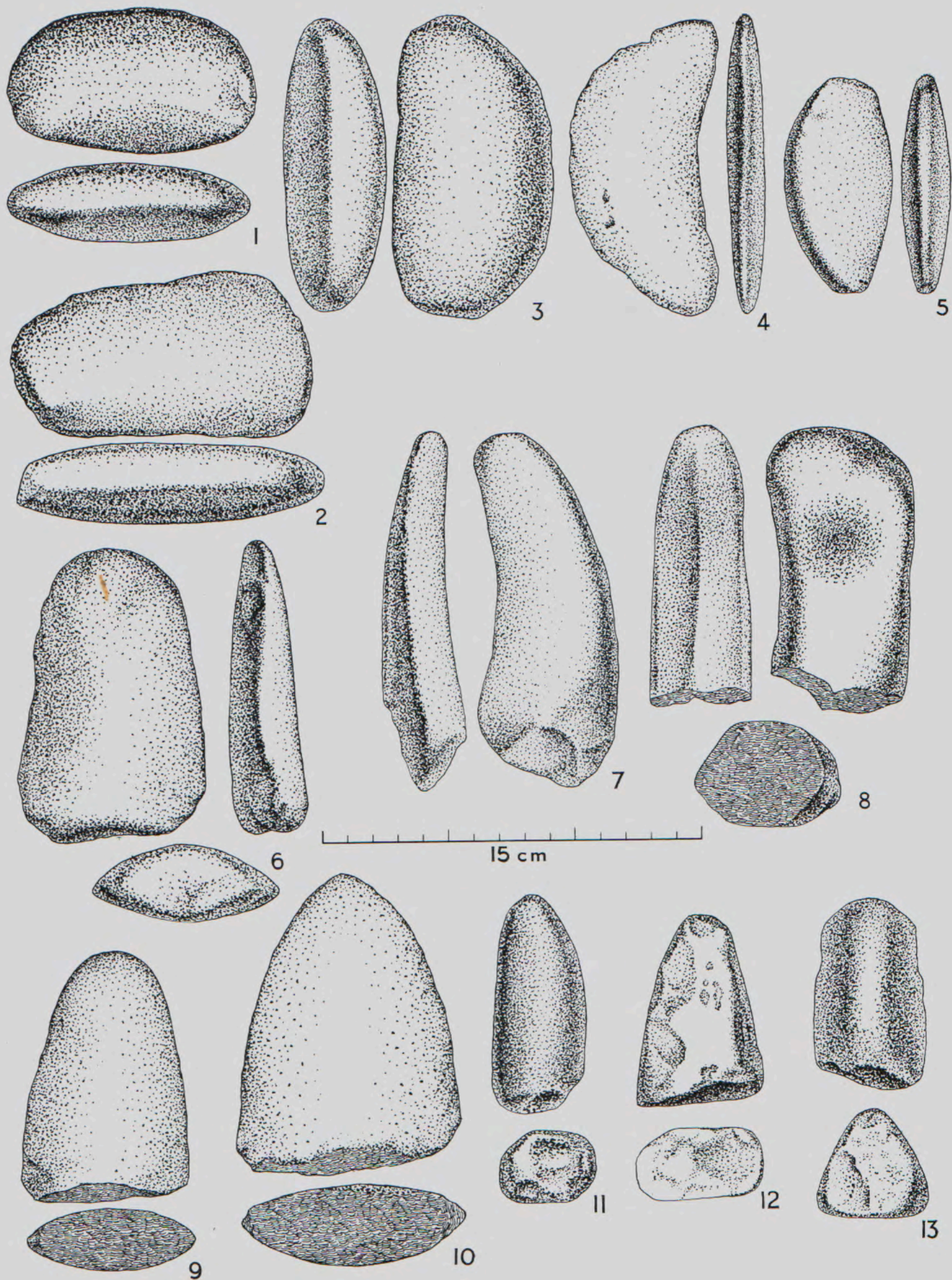
STONE RING FRAGMENTS, SMALL DISK RUBBERS, ? LINE SINKERS, ETC.

SCALE 1:2

PLATE 37

SANDSTONE RUBBERS

1. Flattish oval sandstone rubber with incipient hollow edge, K.H. 1321 (two views—see also Pl. 38, Fig. 1).
2. Sandstone rubber with incipient keel, K.H. 198 (two views).
3. Sandstone rubber with incipient hollow edge, Q 20 (3)₁ (two views—see also Pl. 38, Fig. 2).
4. Hollow rubber, M 15 (5) 1 (two views).
5. Sandstone rubber with one thin edge, N 23 (1) (two views).
6. Hollow rubber K 25 (10) (three views—see also Pl. 38, Fig. 3).
7. Hollow rubber, K.H. 159 (two views—see also Pl. 38, Fig. 4).
8. Atypical hollow rubber with circular pitting on one side, K.H. 157 (three views—see also Pl. 38, Fig. 5).
9. Blade rubber, K.H. 334 (two views—see also Pl. 38, Fig. 7).
10. Blade rubber, Q 19 (6) (two views—see also Pl. 38, Fig. 8).
11. Cylindrical rubber, K.H. 332 (two views—see also Pl. 39, Fig. 1).
12. Flattish cylindrical rubber K.H. 1320 (two views—see also Pl. 39, Fig. 1).
13. Sandstone rubber with triangular section, K.H. 162 (two views).



SANDSTONE RUBBERS

SCALE 1:2

PLATE 38

SANDSTONE RUBBERS

1. Sandstone rubber with incipient hollow edge, K.H. 1321. (See also Pl. 37, Fig. 1.)
2. Sandstone rubber with incipient hollow edge, Q 20 (3). (See also Pl. 37, Fig. 3.)
3. Hollow rubber, K 25 (10). (See also Pl. 37, Fig. 6.)
4. Hollow rubber, K.H. 159. (See also Pl. 37, Fig. 7.)
5. Atypical hollow rubber with circular pitting on one side, K.H. 157 (two views—see also Pl. 37, Fig. 8).
6. Atypical sandstone rubber, K.H. 460.
7. Blade rubber, K.H. 334. (See also Pl. 37, Fig. 9.)
8. Blade rubber, Q 19 (6). (See also Pl. 37, Fig. 10.)



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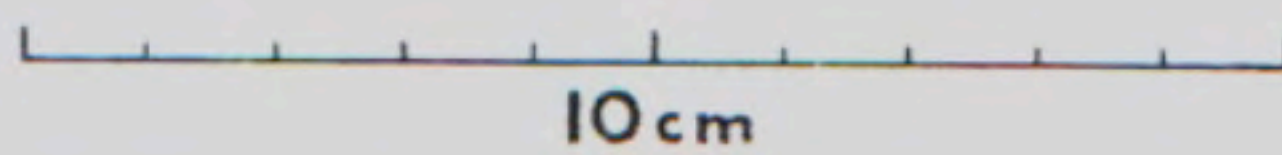
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7



8



10 cm

SANDSTONE RUBBERS

SCALE APPROX. 3:5

PLATE 39

SANDSTONE RUBBERS

1. Three cylindrical rubbers, K.H. 331, K.H. 1320, K.H. 332.
(See also Pl. 37, Figs. 11-12.)
2. Three cylindrical rubbers, K 18 (6), —, M 24 II.
3. Four small disk rubbers or grinders, K.H. 49, K.H. 1307,
M 26 (39), Q 21 (3). (See also Pl. 27, Fig. 10, and Pl. 36,
Figs. 14-15.)
4. Eight small disk rubbers or grinders, L 24 (8), M 23 (3),
L 25 (11), L 22 (2), L 18 (1), K.H. 48, L 19 (1), M 23 (4).
(See also Pl. 36, Figs. 10-13.)
5. Three rough oval rubbers, —, K.H. 1309, —. (See also Pl. 36,
Fig. 16.)
6. Four rough oval rubbers.



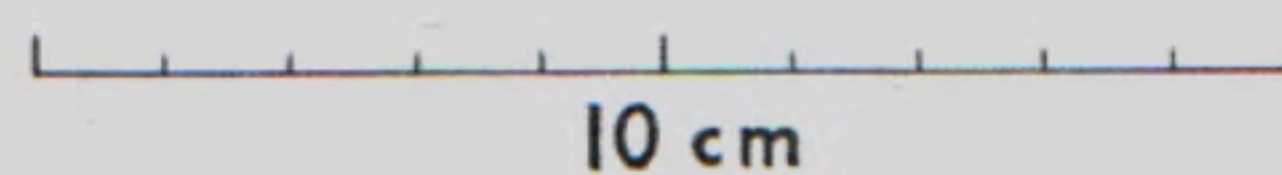
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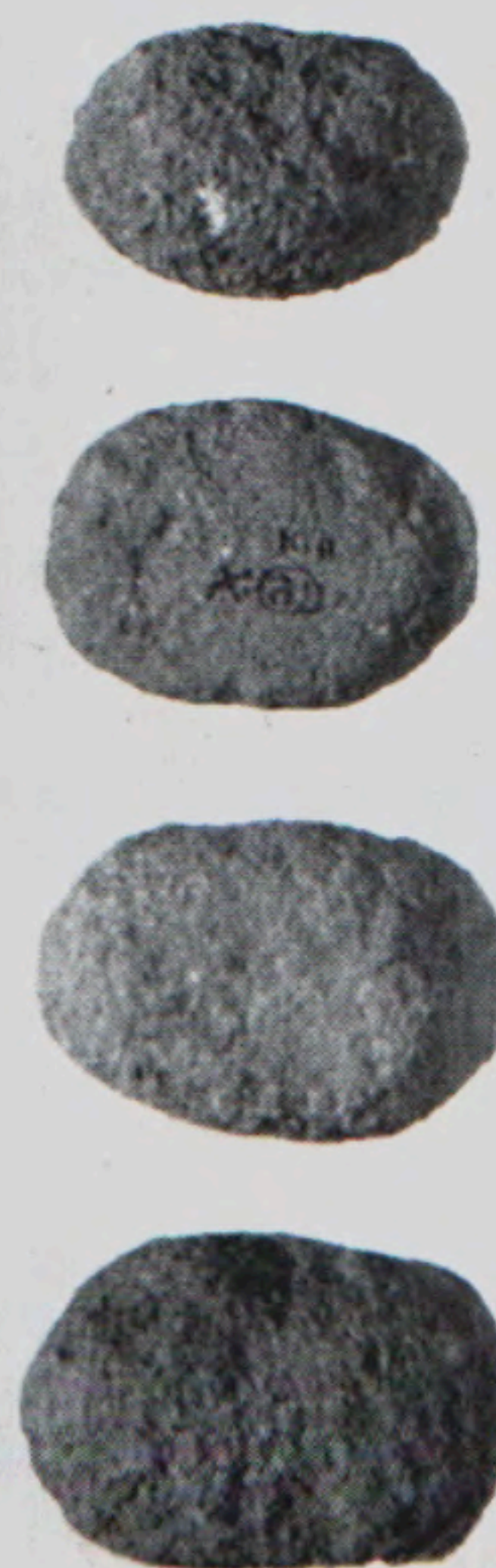
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SANDSTONE RUBBERS
SCALE APPROX. 3:5

PLATE 40

? FISHING-LINE SINKERS AND OTHER
GROOVED STONES

1. Four ? fishing-line sinkers, K 26 (9), X 28, M 26 (5), K.H. 454.
(See also Pl. 36, Figs. 17-19.)
2. A modern fishing-line sinker, Khartoum Ethnological Collection No. II 2203.
3. Eight ? fishing-line sinkers, J 14 (8), &c. (See also Pl. 36, Fig. 20.)
4. Five ? fishing-line sinkers.
5. Grooved pebble, N 16 (8).
6. Grooved stone, M 25 (6) (two views).



? FISHING-LINE SINKERS AND OTHER GROOVED STONES

SCALE APPROX. 3:5

PLATE 41

GROOVED STONES

1. K.H. 455 (two views).
2. K.H. 456 (two views).
3. K.H. 458 (two views).
4. K.H. 457 (two views).



1



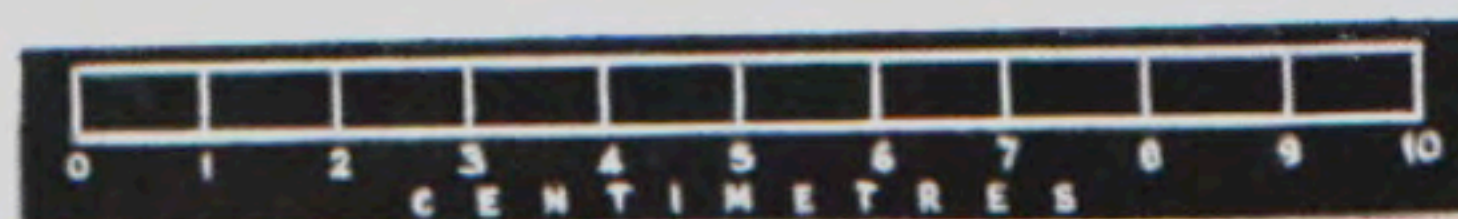
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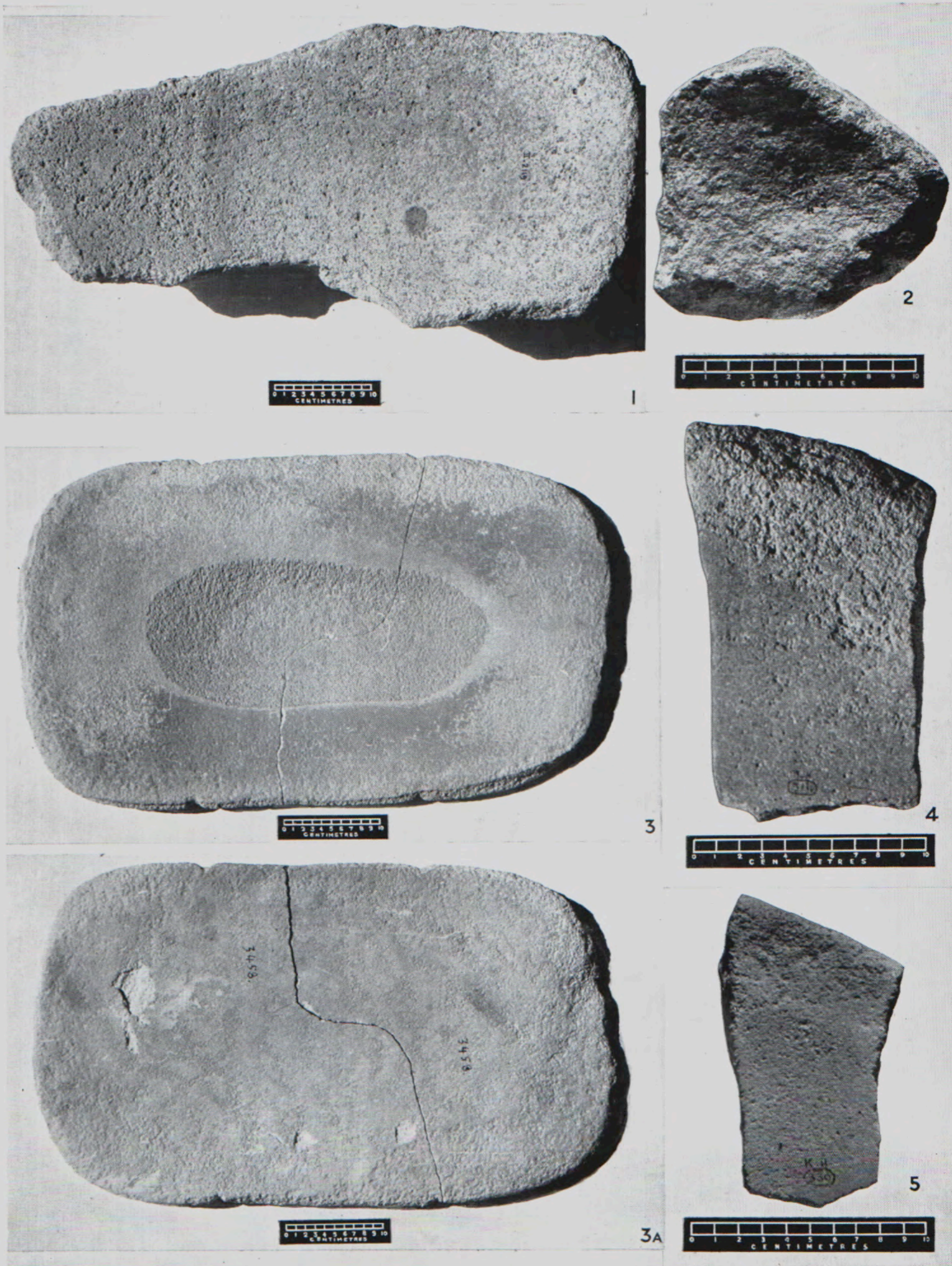
GROOVED STONES

SCALE 2:3

PLATE 42

LOWER GRINDSTONES

1. Lower grindstone found on the site, probably modern, Khartoum Ethnological Collection No. II 2119.
2. Sandstone fragment with concave upper surface, from 170 cm. depth in square M 22.
3. Flat lower grindstone from Wadi Howar, Khartoum Antiquities Collection No. 3458.
- 3A. Ditto (underside).
4. ? Fragment of flat lower grindstone, K.H. 314.
5. ? Fragment of flat lower grindstone, K.H. 330.



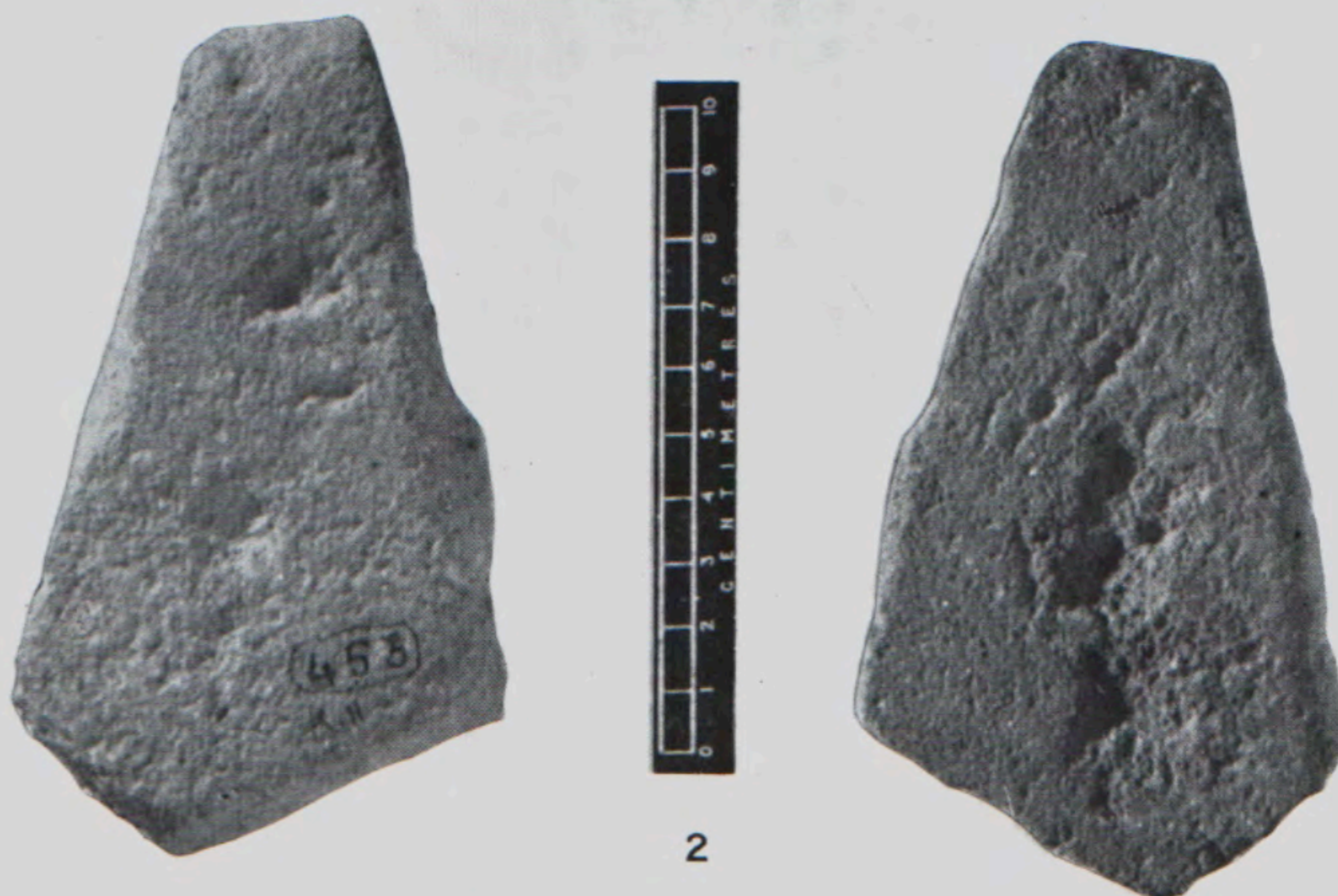
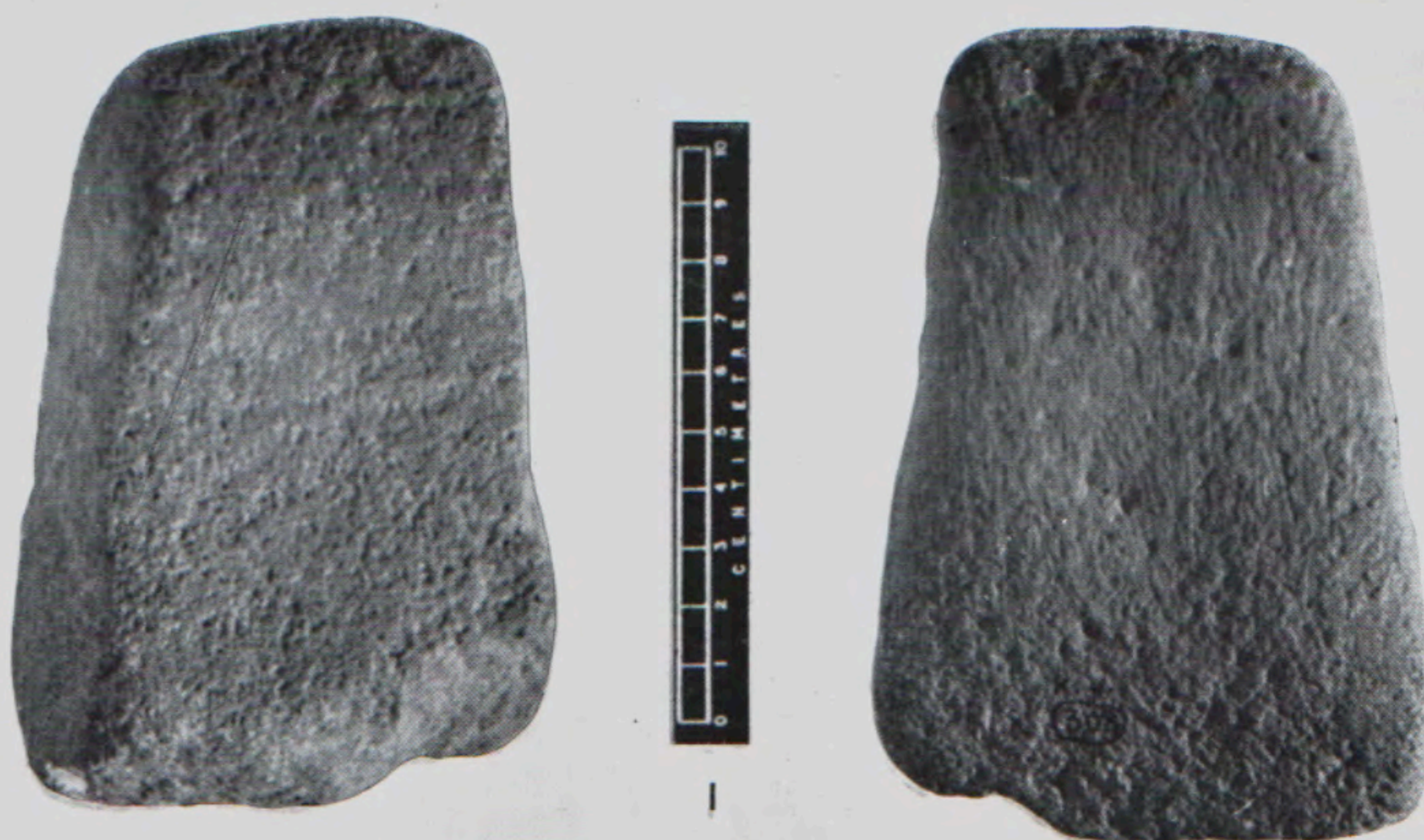
LOWER GRINDSTONES

FIGS. 1, 3, 3A SCALE 1:5
FIGS. 2, 4, 5 SCALE APPROX. 1:2

PLATE 43

LOWER GRINDSTONES (? FRAGMENTS)

1. Sandstone fragment used after fracture, K.H. 308 (two views).
2. Sandstone fragment used after fracture and pitted, K.H. 453 (two views).
3. ? Fragment of concave grindstone with rounded edge, K.H. 315.
4. ? Fragment of slightly concave grindstone with rounded edge, K.H. 327.



LOWER GRINDSTONES (? FRAGMENTS)

FIG. 1 SCALE APPROX. 1:2

FIG. 2 SCALE 3:5

FIGS. 3, 4 SCALE 1:2

PLATE 44

? LOWER GRINDSTONE RIM FRAGMENTS

1. Rim fragment with smooth surface near rim at an angle to the rest of the worn concave surface, M 21 (2) 4.
2. Rim fragment with smooth surface near rim at an angle to the rest of the worn concave surface, K.H. 316.
3. Rim fragment with smooth surface near rim at an angle to the rest of the worn concave surface, K.H. 451.
4. Rim fragment with smooth surface near rim at an angle to the rest of the worn concave surface, K.H. 325.
5. Rim fragment from grindstone concave on one side and used on the other, K.H. 310.
6. Rim fragment from grindstone concave on one side and used on the other, K.H. 313.
7. Rim fragment with smooth surface near rim at an angle to the rest of the concave surface, with wear on the other side of the grindstone as well, K.H. 326.



1



2



3



4



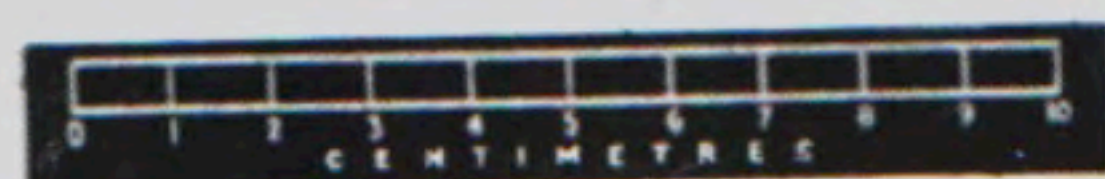
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? LOWER GRINDSTONE RIM FRAGMENTS

SCALE APPROX. 1:2

PLATE 45

UNUSUAL ? OCHRE-GRINDERS

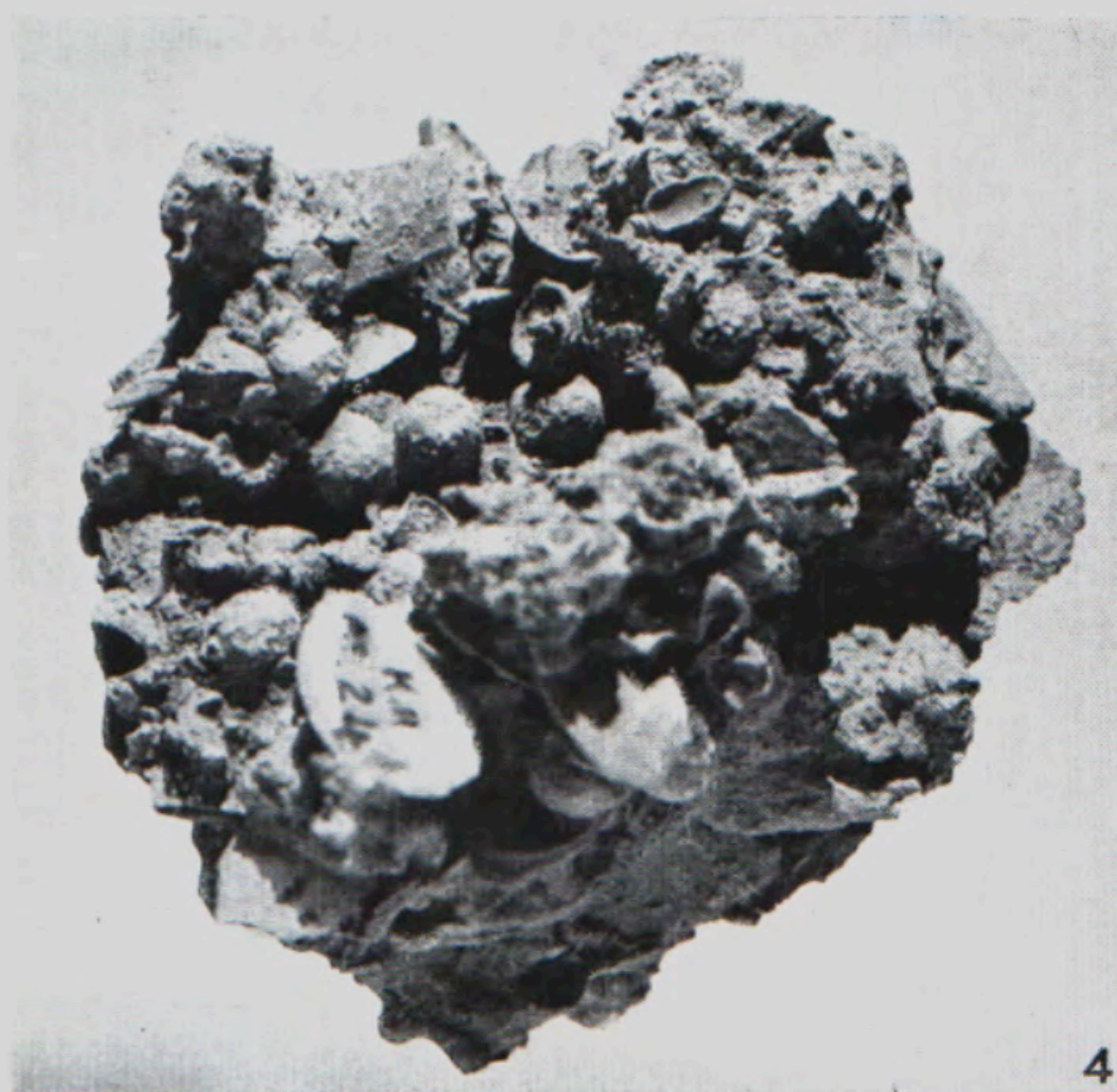
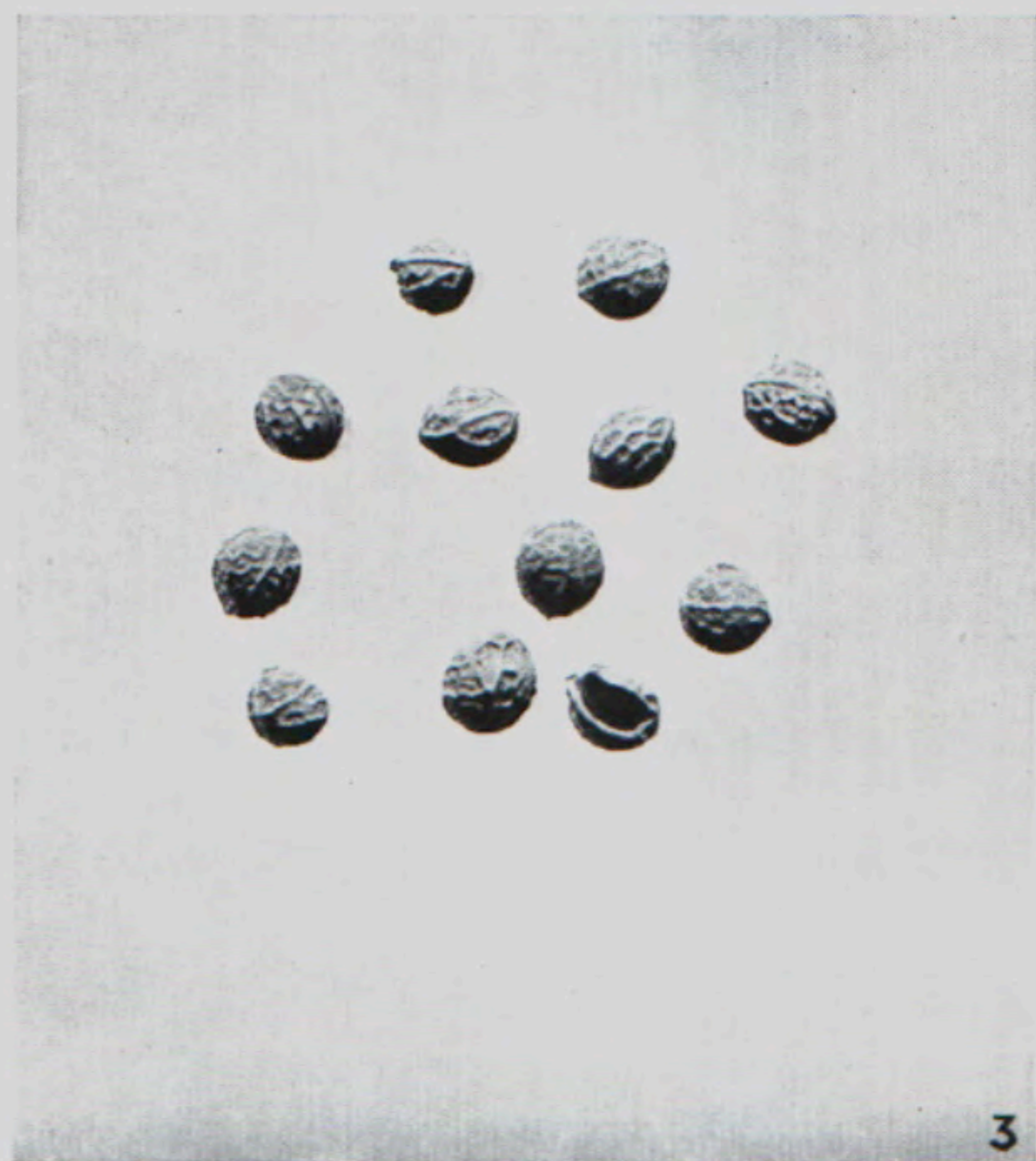
1. Fragment of unusual sandstone grinder with a wide hollow in each face, K.H. 209 (two views—see also Pl. 36, Fig. 21).
2. Fragment of unusual sandstone grinder with a keeled edge and a hollow in each face, K.H. 254 (two views).

FOSSILIZED SEEDS OF THE *CELTIS* TREE

3. Fossilized seeds of *Celtis integrifolia*.
4. Kankar concretion containing *Celtis* seeds and a quartz artifact.



UNUSUAL ? OCHRE-GRINDERS
SCALE APPROX. 3:5



FOSSILIZED SEEDS OF THE *CELTIS* TREE
SCALE 1:1

CHAPTER VII THE BONE ARTIFACTS

SPEAR-HEADS AND HARPOON HEADS

A PART from the seventy-odd fragments photographed (see Plates 46-51), about 200 other fragments showing either butts or barbs from these weapons were found during the excavation. The fact that they include no complete weapon is not due to the disturbed nature of the site, as a very large proportion of the fragments were broken before they became coated with kankar. This shows that they were broken at the time the site was occupied, probably in the chase when the fish or other game was stabbed. In most cases no doubt these fragments were brought back to the settlement embedded in the body of the game, and discarded on the site with other bone fragments when the catch was eaten.

Two fragments, M 17 (65) and L 25 (3) (Pl. 46, Fig. 1), show that weapons with at least four barbs existed, and the fact that they and the majority of the fragments are well made suggests that this type may have been more common than the single two-barbed example R 21 (3) (Pl. 46, Fig. 2) which is rather more crudely made (its point shows recent damage). Indeed L 25 (3), a well-made fragment showing four barbs (the anterior barb and point having been damaged in antiquity), was broken off behind the fourth barb, and looks as if it may well have come from a weapon that originally had more than four barbs. Normally the barbs were only on one side of the shaft, but Pl. 46, Fig. 3, shows three fragments (R 15 (2), M 23 (40), and N 24 (2)) which seem to have had barbs on either side of the shaft.

Most of the butts have a circular cross-section; a few, such as M 15 (4), M 19 (1), and P 19 (2) (Pl. 47, Fig. 2), have an oval cross-section (see also Pl. 51, Figs. 8 and 13); and rarely, as K 26 (11) and Q 21 (1) (see Pl. 47, Fig. 3), they have a flat and slightly splayed butt, which seems to be due to their being broken spear-heads re-used, by rubbing down the broken end into a shape that could be bound into a shaft. The normal butt has four to eight grooves round it just above where it begins to taper to what is normally a bluntly pointed butt, although a few sharply pointed butts occur (as L 23 (1) in Pl. 47, Fig. 1). No doubt the grooves were intended to grip the cord with which the bone head was bound into the wooden shaft of the spear. Spears with bone or horn points fixed on to a wooden shaft with raw hide (a section of cow's tail being shrunk on over the joint) or bound on with cord are still used by the Nuer, Shilluk, and Dinka of the southern Sudan (see Jackson, 1923, p. 128); but these tribes never make barbed bone spear-heads. True harpoons seem to have been rare in the early settlement. The majority of butts seem to be those of ordinary spear-heads merely intended to have been bound fast into the shaft; and probably this was the earlier type. (Possibly the idea of the harpoon may have come from a spear-head which came off the shaft when a fish was speared but still remained attached by the cord with which it had been bound on to the shaft.)

Two large atypical examples, Q 19 (4) and N 19 (3) (Pl. 48, Figs. 1 and 2), show notches possibly intended to hold fast the cord of the harpoon (cf. Petrie, *Prehistoric Egypt*, p. 24), but the eight grooves on the back of Q 19 (4) just in front of the notch suggest that it may have been only a spear-head intended to be bound fast into a shaft. The grooves would appear to be unnecessary in a harpoon. N 19 (3) is a rather crude object, being made out of a curved (? rib) bone, but it seems to have the same features as Q 19 (4) less the grooves. Then there are five fragments, M 20 (5) 110, L 24 (9), Q 21 (5), 3703 (12), and K 20 (1), which show that they were bored through at the base of a barb (see Pl. 50, Fig. 3, and Pl. 48, Figs. 3 and 4). These must have been true harpoons, for it is difficult to see

how the hole could have been made for a repair, as in the case of pottery; compare also Roman, 1935, pl. 1. 4 and 5. K 20 (1) is decayed, but shows traces of having had four barbs, and may have had more. K 26 (1) was bored with a hole nearly as large as the diameter of the shaft, and broke at the hole (see Pl. 48, Fig. 3).

Pl. 49 shows that the variety of points and barbs was considerable.

PROBABLE ARROW-HEADS

The fragments of points, barbs, and butts shown in Pl. 50, Figs. 1 and 2 (X 4, K.H. 27, M 25 (17), X 3, M 17 (35), L 22 (4), L 26 (13), M 27 (10) 180-200, L 25 (14), X 5, L 24 (14), L 23 (2), N 17 (1), L 25 (15), K.H. 5, L 24 (14)) come from weapons too small to have made practical spear-heads, and there can be very little doubt that they are fragments of barbed bone arrow-heads, which must have required considerable skill to make.

The fact that nearly all these bone fragments of spear- and arrow-heads and of possible harpoons are coated with kankar indicates that they are contemporary with the early settlement with its fossilized bones, stone implements, and Wavy Line pottery. This is confirmed by three fragments (Pl. 51, Figs. 1-3) which are embedded in kankar concretions containing shell fragments and other occupation debris (viz. M 22 from 130 cm. layer, K.H., M 25 (17) from layer 60-80 cm. The last is probably an arrow-head fragment, shows trace of high polish, and has a longitudinal groove down the left side of the shaft).

The following fragments from layers that were probably undisturbed further support the claim that these bone spear-heads, &c., were contemporary with the early settlement:

| | | | | | | | | | |
|-----------|---|---|---|-------------|----------|---|---|---|-------------|
| M 24 (5) | . | . | . | 160-80 cm. | M 27 (6) | . | . | . | 80-110 cm. |
| M 27 (13) | . | . | . | 200-57 cm. | M 28 (7) | . | . | . | 180-200 cm. |
| M 27 (12) | . | . | . | 200-57 cm. | M 28 (9) | . | . | . | 80-100 cm. |
| M 27 (10) | . | . | . | 180-200 cm. | M 29 (5) | . | . | . | 120-40 cm. |
| M 27 (5) | . | . | . | 100-20 cm. | | | | | |

A few fragments which have never been coated with kankar, or from which the kankar has worn off, show that the bone was frequently highly polished. Fragment P 19 (2) (Pl. 47, Fig. 2, and Pl. 51, Fig. 5), in addition to showing this high polish, shows traces of decoration by incised crossing lines just above the grooves intended for the cord fastening it into the shaft.

See Pl. 51, Figs. 4 and 7, for two fragments which may come from atypical weapons, viz.:

S 20 shows a barb cut on a flattish bone with a hollow centre, the cutting of the barb having exposed the hollow interior.

R 21 (2) shows unusual grooves cut on only one side of a slightly curved butt fragment,

K 18 (5) and M 21 (1) (Pl. 51, Figs. 11 and 12) are larger examples of what are presumably butts.

X (20) and M 26 (23) (Pl. 51, Figs. 9 and 10) may possibly be fragments of flat-ended butts, but their purpose is uncertain.

Normal spear-heads had a shaft varying from 10 to 15 mm. in diameter. Four fragments show that weapons with shafts of a maximum diameter of 23-32 mm. did exist (viz. M 21 (1), K 26 (13), Q 19 (4), and M 17 (1)). K 19 (4) is probably a fragment of a spear-shaft—it shows high polish and incised line decoration, some criss-cross (see Pl. 51, Fig. 6).

DECORATED BONE FRAGMENTS

Slight decoration with incised crossing lines on one of the bone spear-heads (P 19 (2)) has been mentioned above, and when it has been possible to clean the kankar incrustation from all of the specimens, it may be found that other spear-heads were similarly decorated.

On Pl. 52 are shown a few other fragments of bone decorated in a similar way, which, it is reasonable to think, were contemporary with the early settlement. Pl. 52, Fig. 1, is a small fragment of worked bone (M 13 (3)) which has incised parallel lines on two sides and a number of indentations at one end, which suggest that it may possibly have been used as an alternative kind of comb for the decoration of pottery, instead of the usual cat-fish spine (see p. 81). But this is by no means certain, for the fragment which appears to have been of a roughly flattish oval cross-section seems to be unnecessarily thick for such a comb.

Pl. 52, Fig. 2, shows a fragment (K 19) of flattish oval cross-section, 12 mm. broad, which was carefully decorated with incised crossing lines on each rounded edge and on the end.



FIG. 6.
Scale 1:1.

Pl. 52, Fig. 4, shows eight small fragments with circular cross-section which appear to have been decorated with incised (3 with crossing lines, ? 3 with spiral lines, 1 herring-bone and 1 decayed (possibly spiral)) lines all over. They are possibly fragments of hairpins similar to those from predynastic Egypt (see Petrie, *Prehistoric Egypt*, p. 30 and pl. VIII), where the pattern on the stems begins with crossing lines in S.D. 31 and with spiral lines between S.D. 35 and 68. The pointed shape of two of the fragments lends support to the suggestion that they come from hairpins. Five other small fragments of bone showed incised decoration, four with crossing lines (Pl. 52, Fig. 5) and one doubtful.

Fig. 6 on this page and Pl. 52, Fig. 3, show a perforated fragment of bone that has been shaped and decorated with a border of slanting lines along the slightly convex edge of the upper side. It seems to have been part of a small palette or pendant (O 20 (1)). Cf. Petrie, *Prehistoric Egypt*, pl. XLIV, fig. 98 U, for a more elaborate rectangular slate palette. Border lines on slate palettes are stated by Petrie to begin at S.D. 53, and he thinks that they indicate Dynastic influence.

WORKED BONE FRAGMENTS

Pl. 53, Fig. 1, shows four fragments of bone the shaping of which seems to have been purposive.

In Pl. 53, Figs. 2-4, are four fragments of bone which show how desired lengths of bone were obtained by cutting a groove round the bone and then breaking it off. One of the examples did not break true, because the groove was not cut deep enough. Pl. 53, Fig. 4, also shows P 22 (1), a small polished point which has been grooved and then broken off in the same way.

Pl. 53, Fig. 5, shows two pieces of bone which have been roughly hacked for some reason.

Pl. 53, Fig. 6, shows a fragment of bone that appears to have been both pointed and polished still embedded in a kankar concretion. The bone appears to have been burnt before it was embedded in the concretion.

BONE AWLS

These were not common, but Pl. 54, Fig. 1, shows ten fragments which appear to come from the sharp ends of this type of artifact. Pl. 54, Fig. 2, shows a fragment of bone like an awl-point in which a groove has been cut on one side 24 mm. from the tip of the point. It is just possible that this groove was intended for drawing a thread, much as does the notched point of a crochet-hook. Two other notched fragments are also shown, one ? naturally pointed and the other artificially shaped. Compare also Pl. 50, Fig. 4.

Pl. 54, Fig. 4, shows examples of the distal ends of metapodials of a small antelope the size of an oribi, though one is larger, being approximately such as could have come from a Soemmering's Gazelle. These specimens have been rubbed down to a greater or less degree on either side of the

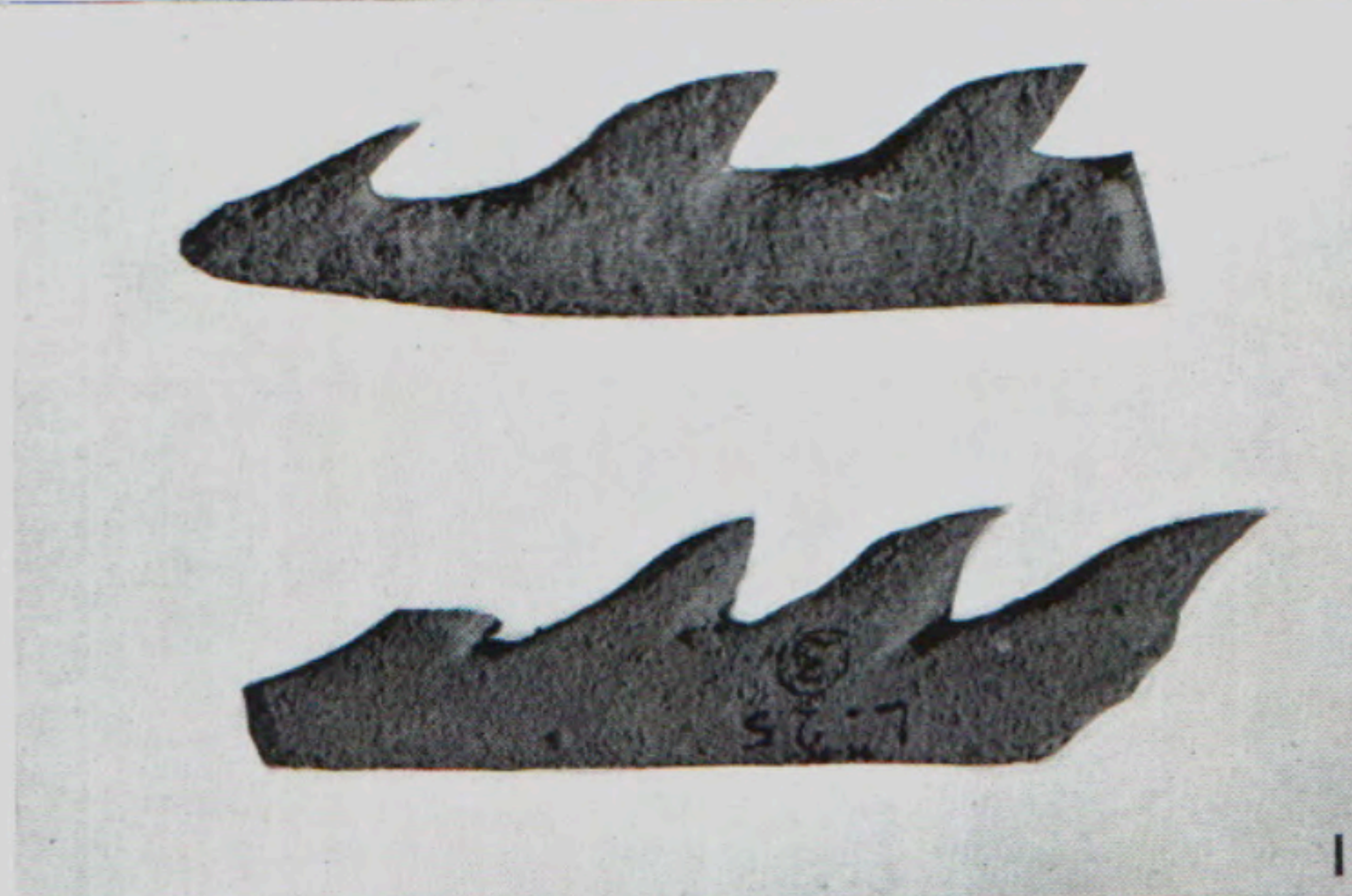
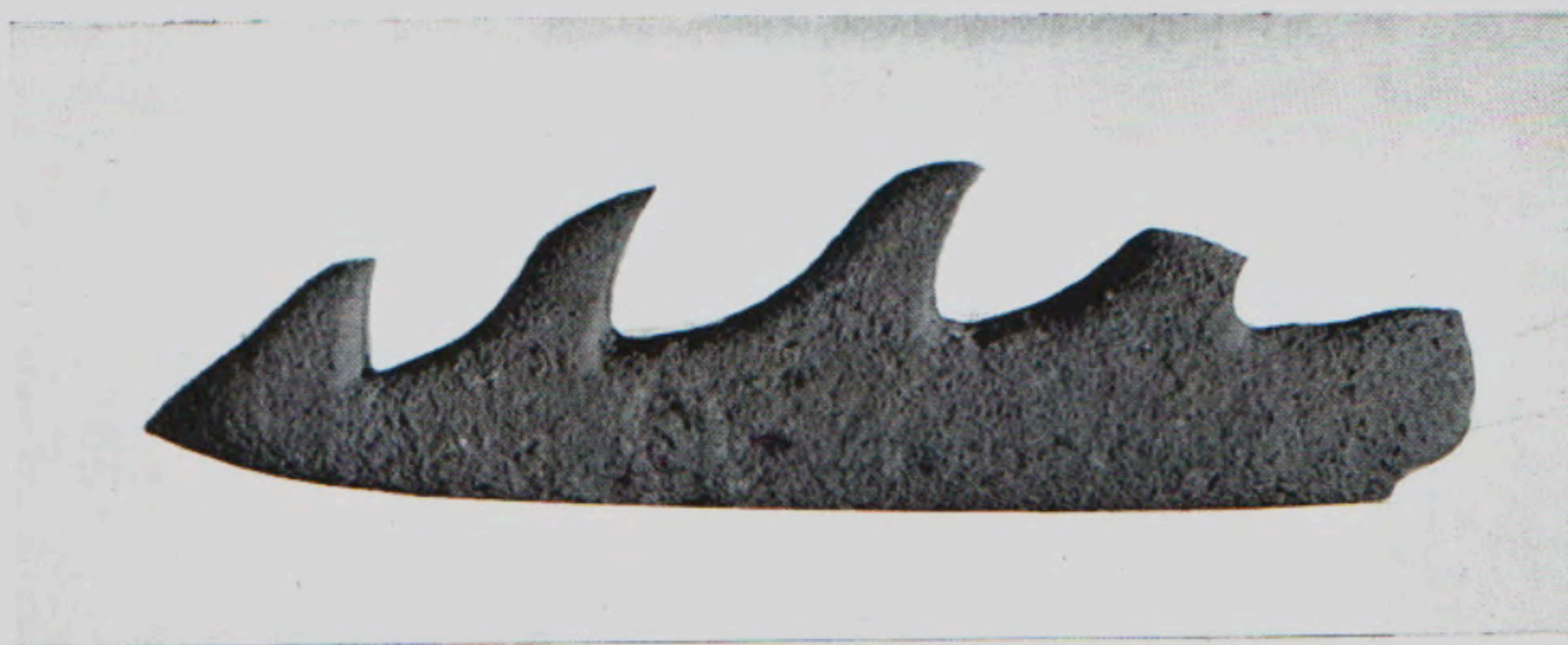
natural groove which occurs between the two trochleae. In one example in Pl. 54, Fig. 5, the trochleae have been worn down to nearly half their length and three grooves cut in the top. The shafts of this example and of one other shown in the same figure have incised lines on the anterior surface. The only explanation of these worked metapodials seems to be that they were the handle ends of awls which have broken, perhaps in use. Similar metapodials were used as awls in the Aurignacian in Palestine (Garrod and Bate, 1937, pl. XII. i) and at Kerma in Dynasty XII or the Second Intermediate (Reisner, 1923, pl. 52. 2), but in both cases the distal end was left in its natural form, and at Kerma when used as an awl the metapodial shaft was sometimes split in half.

POSSIBLY UTILIZED FISH-BONES

Pl. 54, Fig. 3, shows two fish-bones probably from *Tilapia*, in which the natural hole seems perhaps to have been artificially enlarged to make a kind of needle. The points of both examples are broken off, as could have happened if used as small awls for boring, but since the excrescences near the vertebral ends of the bones have not been removed, it is perhaps more likely that they were used as pendants in a necklace (see p. 40).

Pl. 54, Figs. 7 and 7A, show a number of naturally perforated fragments from the ceratohyal bone of the catfish *Clarias anguillaris*, which it is just possible may have been used as gorges or primitive fish-hooks in conjunction with the possible fishing-line sinkers described on p. 68.

Pl. 54, Fig. 6, shows a number of the proximal parts of the lower jaw of the catfish *Clarias anguillaris*, which are of a peg-like shape and may have been used by man.



1. Three fragments of multi-barbed bone spear-heads,
M 17 (65), M 24 (6), L 25 (3).



2. A two-barbed bone spear-head, R 21 (3).



3. Three fragments of bi-laterally barbed bone spear-heads, R 15 (2),
M 23 (40), N 24 (2).

BARBED SPEAR-HEADS OF BONE
SCALE 1:1

PLATE 47

BUTT FRAGMENTS OF BARBED BONE
SPEAR-HEADS

1. Butts with normal circular section, L 26 (7), N 19 (2), L 25 (2),
L 23 (1).
2. Butts with an oval section, M 15 (4), M 19 (1), P 19 (2). (See
also Pl. 51, Fig. 5.)
3. Atypical flat and slightly splayed butts, possibly from broken
spear-heads re-used, K 26 (11), Q 21 (1).



2



3

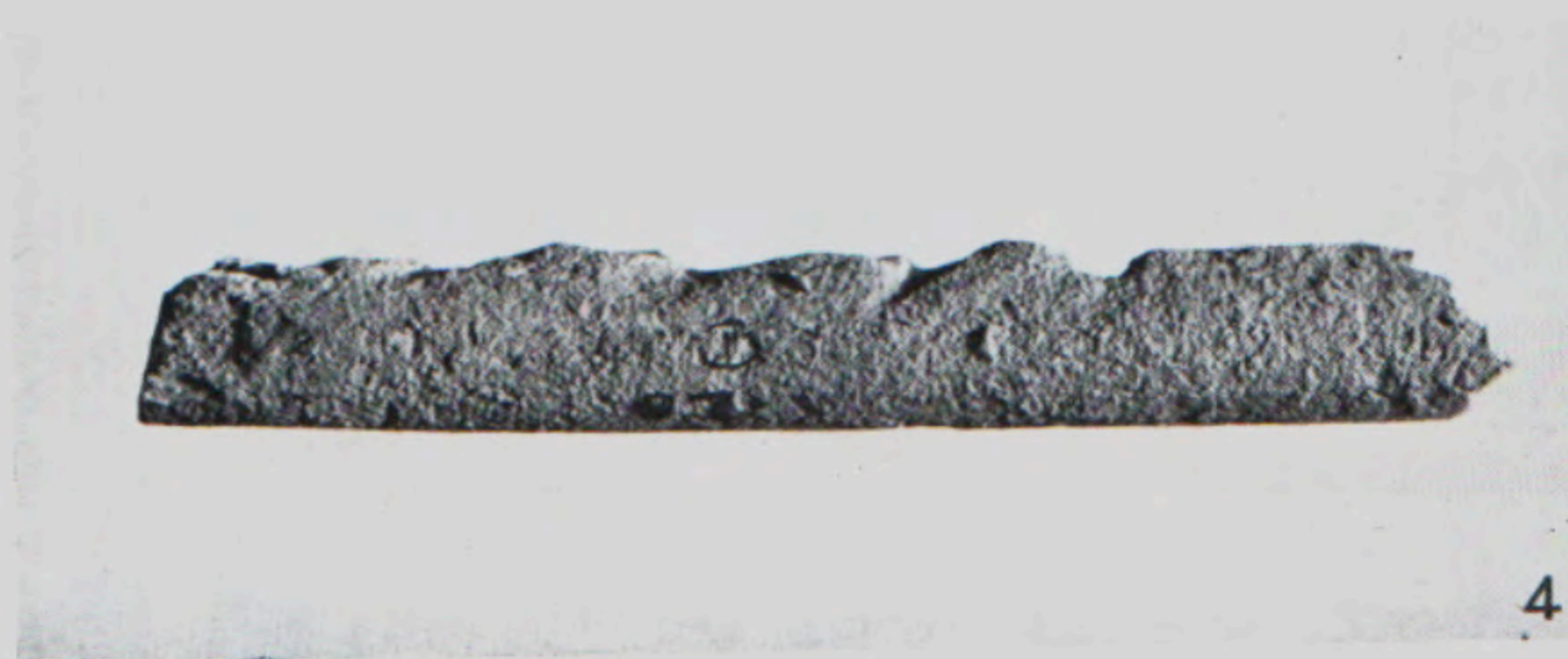
BUTT FRAGMENTS OF BARBED BONE SPEAR-HEADS

SCALE 1:1

PLATE 48

FRAGMENTS OF ATYPICAL BONE SPEAR-
HEADS AND OF HARPOONS

1. Fragment of large ? spear-head butt with grooves and notch,
Q 19 (4).
2. Fragment of curved bone with barb and notch, N 19 (3).
3. Three fragments of spear-heads with a hole bored in them—
presumably harpoons, 3703 (12), Q 21 (5), K 26 (1).
4. Fragment of a multi-barbed bone spear-head with a hole at the
base of one barb—presumably a harpoon, K 20 (1).



FRAGMENTS OF ATYPICAL BONE SPEAR-HEADS AND OF HARPOONS
SCALE 1:1

PLATE 50

FRAGMENTS OF BARBED BONE ARROW-
HEADS

1. Point fragments of barbed bone arrow-heads.
2. Barb and butt fragments of barbed bone arrow-heads.
3. Butt fragment of ? barbed bone arrow-head with a hole bored in it, M 20 (5) 110.
4. Two atypical bone ? arrow points, L 23 (2), M 17 (4).



FRAGMENTS OF BARBED BONE ARROW-HEADS
SCALE 1:1

PLATE 51

FRAGMENTS OF BONE SPEAR-HEADS, ETC.

1. Butt fragment of bone spear-head in kankar concretion, M 22 (130 cm.).
2. Butt fragment of bone spear-head in kankar concretion.
3. Fragment of atypical bone arrow-head in kankar concretion, M 25 (17).
4. Barb cut on a flat bone, S 20.
5. Butt fragment of barbed bone spear-head with polish and incised decoration, P 19 (2)—see also Pl. 47, Fig. 2.
6. Fragment of decorated bone ? spear-shaft, K 19 (4).
7. Butt fragment with unusual grooves, R 21 (2).
8. Oval butt fragment, M 17 (7).
9. Flat-ended ? butt fragment, X 20.
10. Flat-ended ? butt fragment, M 26 (23).
11. Large ? butt fragment, K 18 (5).
12. Large ? butt fragment, M 21 (1).
13. Oval ? butt fragment, X 19.



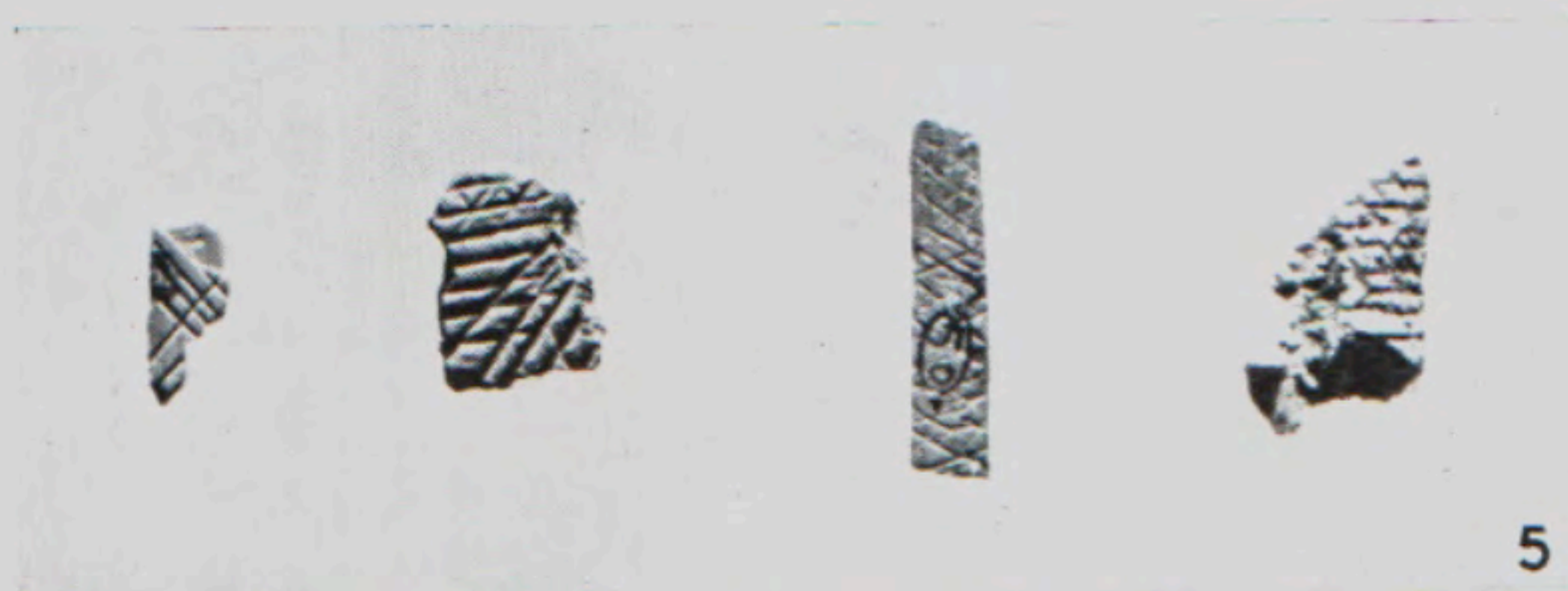
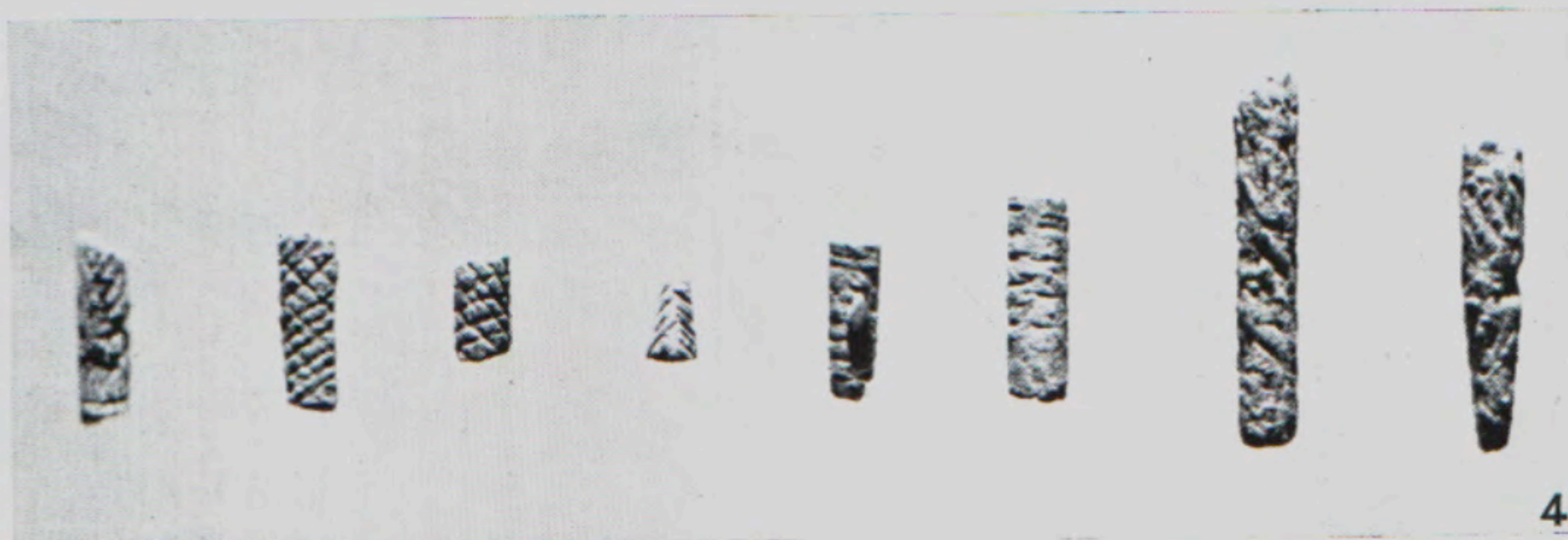
FRAGMENTS OF BONE SPEAR-HEADS, ETC.

SCALE 1:1

PLATE 52

FRAGMENTS OF DECORATED BONE

1. Decorated and toothed bone fragment, M 13 (3).
2. Bone fragment decorated with incised crossing lines on the edge of each long side and on the end, K 19.
3. Fragment of flat bone pendant decorated with border of incised slanting lines, O 20 (1).
4. Fragments of bone ? hair-pins with incised decoration.
5. Fragments of bone with incised decoration.

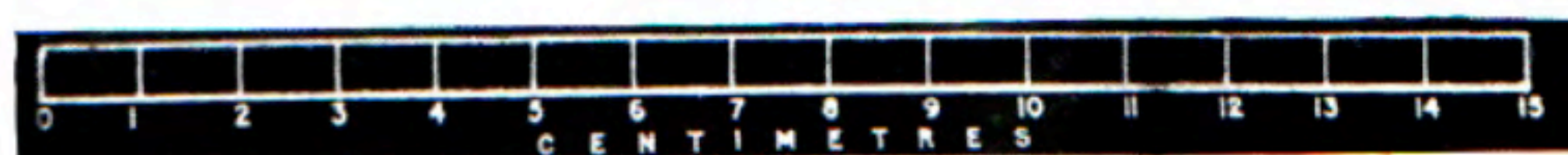
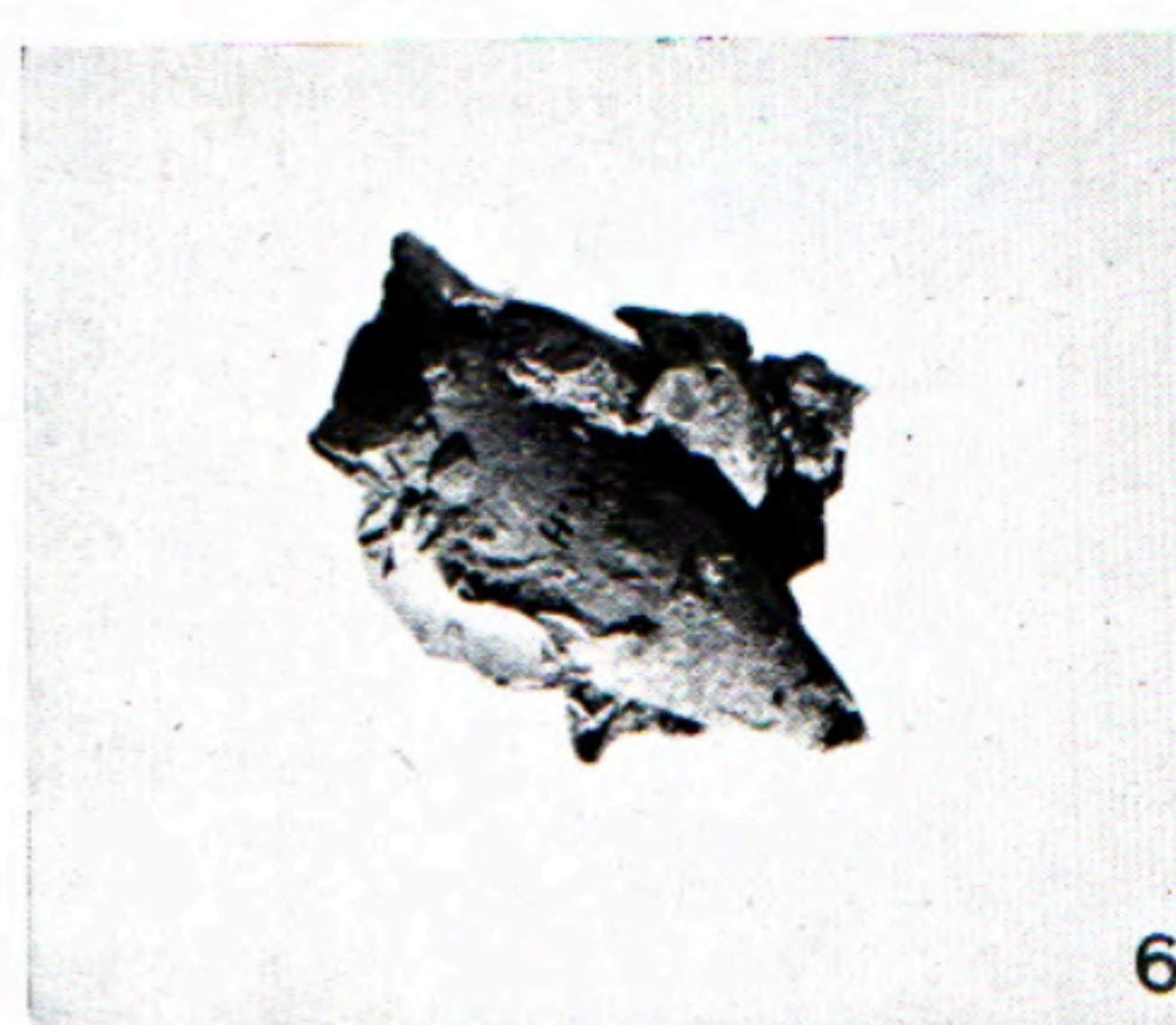


FRAGMENTS OF DECORATED BONE
SCALE 1:1

PLATE 53

FRAGMENTS OF WORKED BONE

1. Four fragments of shaped bone.
2. Fragment of bone grooved for cutting.
3. Fragment of bone grooved and cut.
4. Small polished bone broken at groove, P 22 (1). Fragment of bone grooved and cut.
5. Two fragments of roughly hacked bone.
6. Pointed fragment of polished bone embedded in a kankar concretion.

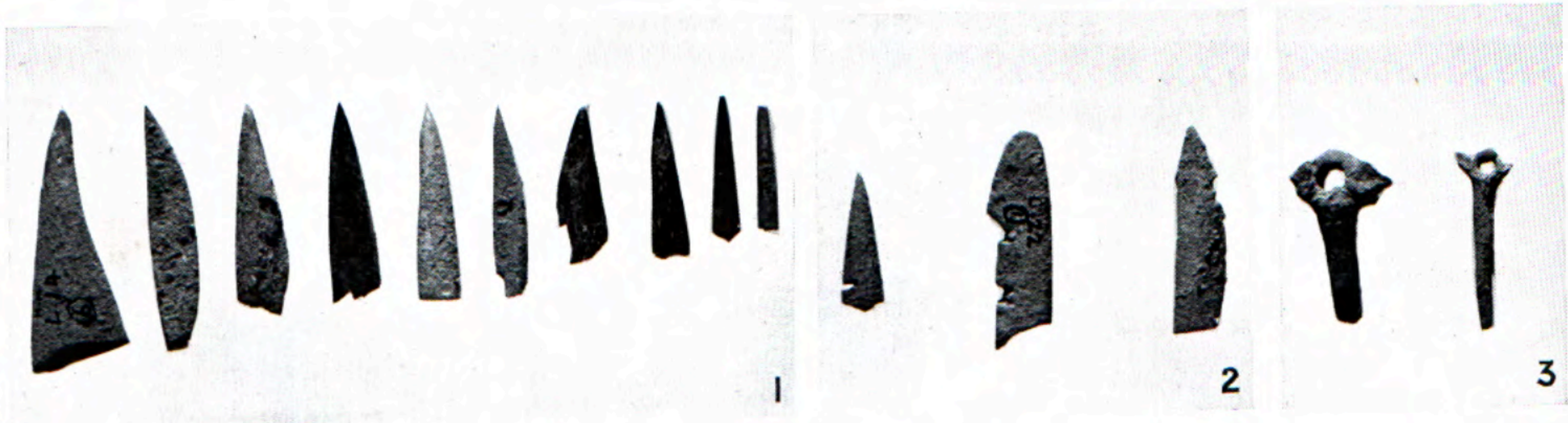


FRAGMENTS OF WORKED BONE
SCALE 3:5

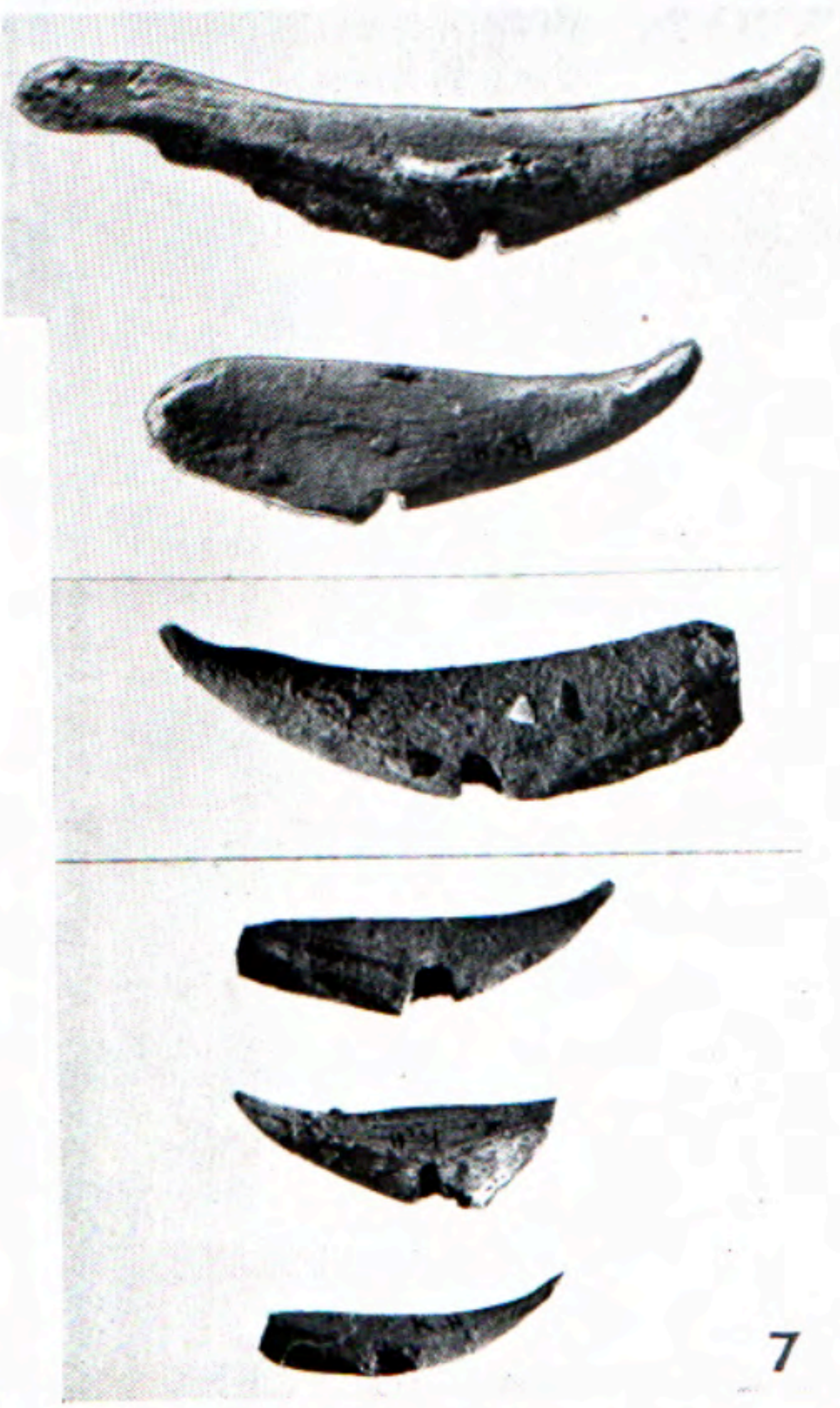
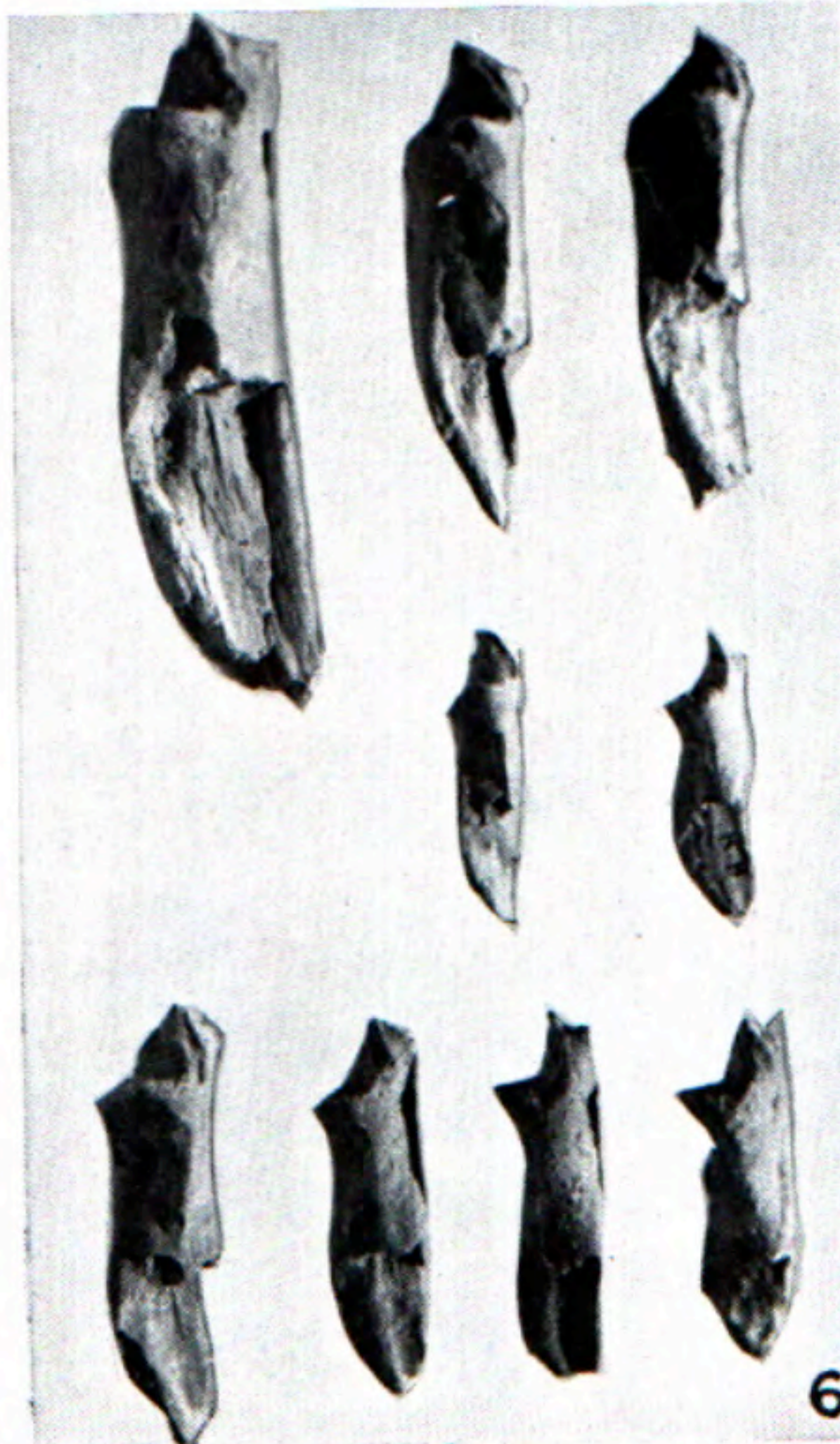
PLATE 54

BONE AWLS AND POSSIBLY UTILIZED
FISH-BONES

1. Ten bone awl-points.
2. Three notched bone points.
3. Two fish-bones with the natural hole ?artificially enlarged.
4. Rounded distal ends of small antelope metapodials.
5. Similar bones with the shaft decorated with incised lines.
6. Fragments of the proximal part of the lower jaw of the catfish
Clarias anguillaris.
- 7, 7A. Fragments of the ceratohyal bone of *Clarias anguillaris*.



10 cm.



BONE AWLS AND POSSIBLY UTILIZED FISH-BONES
SCALE 3:5

CHAPTER VIII THE CLAY ARTIFACTS

WATTLE AND DAUB

(Pl. 55, Fig. 1)

FRAGMENTS of clay that must have come from a form of wattle-and-daub construction used in the huts or windscreens of the early settlement were found in quantity more than sufficient to fill a 4-gallon petrol tin. No other evidence was found of the huts or other constructions used in the settlement. Many of these fragments are either reddened or blackened by fire; and although they are not all so discoloured, it is probably to the action of fire that they all owe their preservation. All the fragments found would not equal the wall area of a small hut or windscreen, and the question remains whether all the walls were plastered, or only a small portion of the wall near the hearth. It is probable that only the mud baked by fire has survived. Several of the best-preserved fragments show the impression of a fibre rope, which was used double and passed on either side of the reeds it secured in a kind of plait. See Pl. 55.

It can be seen that the stalks are not those of a cultivated millet. They are too thin and there is an absence of obvious jointing in the stalk, and in the majority of cases they may well be reeds, as used by the Nuer and Dinka to-day in the same way (see p. 108).

SMALL CLAY OBJECTS OF UNCERTAIN PURPOSE

In the course of our excavations we found over 200 small pieces of clay, varying in size from 5 to 65 mm. in diameter, but mostly not exceeding 25 mm. They were mostly coated with kankar, and have no doubt been baked, or they would not have survived. That they have been baked can be seen where in some cases they have been broken recently. Their shape also in most cases proclaims them artifacts, though the purpose for which they were intended is not clear. There were over 100 other small fragments of less determinate shape, a few of which may be fragments from 'wattle and daub', although the majority are almost certainly not so. That they are products of the early settlement is shown by the fact that they occurred most commonly where the occupation debris was thickest: and one of them was found in the middle of a kankar concretion also containing fish vertebrae. The purposes for which they were made may have been varied—some may have been practical, such as weights for fishing-lines; some may have been used as toys; and some may possibly have been used for magic purposes or the instruction of young people (Cory, 1944, pp. 459 ff.). The more striking are analysed below:

(a) *Cupped both ends*, length 26 mm., maximum diameter of broad end 20 mm., and of narrow end 10 mm. One example (M 18 (3)); and two fragments from narrow end (Pl. 55, Figs. 2 and 2 A). Two other fragments also slightly cupped at narrow end.

(b) *Cupped at broad end and nicked at narrow end*, maximum length 47 mm., maximum diameter of broad end 22 mm. One example (L 26 (10)), and one fragment from nicked end (Pl. 55, Figs. 3 and 3 A.) Two rough fragments possibly from similar objects.

It is just possible that these types (a) and (b) may have been used as 'men' in a game: see Reisner, 1923, p. 48, for examples from Kerma.

(c) *Cupped at broad end*, broken and narrow end missing. Three examples. Pl. 55, Figs. 5, 5 A, and 5 B.

(d) *Blunt conical points*, broken. Two examples. Pl. 55, Fig. 4.

(e) ? *representing head of animal such as crocodile or hippopotamus*: if so may have been used in hunting magic, for it has three holes and two gashes made in it with a sharp point (end broken), O 20 (2). Pl. 56, Figs. 1 and 1 A.

(f) ? *legs or arms of human figurines*. Eleven broken examples. Pl. 56, Fig. 2.

(g) ? *heads of human figurines*. Five examples figured in Pl. 56, Figs. 3 and 3 A, one of which has a hole by which it may have been attached to the body by a small pin. See also Pl. 56, Fig. 4.

(h) ? *ditto*. Roughly spherical with marked 'cup' or concavity on one side. Three examples. Pl. 56, Fig. 5.

(i) *Roughly spherical balls*, varying in diameter from 26 to 5 mm. Sixteen examples. Pl. 57, Fig. 1.

(k) *Roughly spherical balls with at least one marked groove*. Maximum diameter varying from 37 to 18 mm. Ten examples. Pl. 57, Fig. 2. Possibly used as fishing-line weights. Compare thirty-five grooved stones, for which see p. 68.

(l) *Flat disks, more or less circular, with nick in rim*. Seven examples. Pl. 57, Fig. 3.

(m) *Flat disks, more or less circular, heavier than (l), with pair of nicks at roughly opposite sides of rim*. Five examples. Pl. 58, Fig. 1. (? fishing-line weights.)

(n) *Flat disks, more or less circular, with groove in surface of one side*. Two examples. Pl. 58, Fig. 2.

(o) *More or less flat, roughly circular, disks perforated along short diameter*. Two examples. Pl. 58, Fig. 3. (? pendants.)

(p) *Flattish roughly oval disk perforated along greater diameter*, possibly marked to represent a human face. One example. Pl. 58, Fig. 4. (? pendant.)

(q) *Roughly spherical bead*. One example. Pl. 58, Fig. 6.

(r) *Rough disk beads and possibly one fragment of a smaller example*. Two examples. Pl. 58, Fig. 6.

(s) *Small rough cylindrical beads* (not necessarily of the same age as the early settlement). Two examples. Pl. 58, Fig. 6.

(t) *Cylindrical pendant*. One example (broken). Pl. 58, Fig. 6.

(u) *Long, flattish, with narrow end flanged*. One example. Pl. 58, Fig. 6.

(v) *Roughly cylindrical, perforated half-way along major axis*. One example, P 21 (3). Pl. 58, Fig. 7.

(w) *Roughly cylindrical*—marked with some design on end and shaft, ? a human face. One example, broken, L 26 (27). Pl. 58, Fig. 5.

PLATE 55

CLAY ARTIFACTS

1. Fragments of burnt clay from wattle and daub constructions, showing impressions of reeds and rope.
2. Clay object cupped at each end, M 18 (3) (two views).
- 2A. Fragments of four other clay objects cupped at the narrow end.
3. Clay object cupped at one end and nicked at the other end, L 26 (10).
- 3A. Three fragments from objects apparently similar to 3.
4. Two blunt conical points.
- 5, 5A, 5B. Fragments of three clay objects cupped at the broad end (two views of each).



2



2A



3



3A



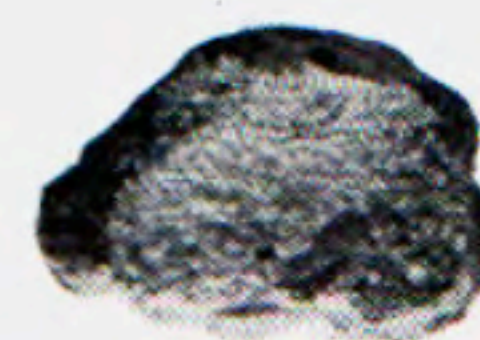
4



5



5A



5B

CLAY ARTIFACTS

SCALE 1:1

PLATE 56

CLAY ARTIFACTS

- 1, 1A. Clay head of animal (? hippopotamus or crocodile), O 20 (2)
(two views).
2. ? Legs or arms of clay figurines.
- 3, 3A. ? Heads of clay figurines (two views of each).
4. ? Head of clay figurine.
5. Spherical clay objects cupped on one side—possibly heads of
figurines.



CLAY ARTIFACTS

SCALE 1:1